SSPS 24

95¢

NATURAL RESOURCES AND THE POLITICAL STRUGGLE

NORMAN WENGERT
North Dakota Agricultural College

United Nations
320.8
D727
No. 24

SHORT STUDIES IN POLITICAL SCIENCE

UNIVERSITY
OF FLORIDA
LIBRARIES

COLLEGE LIBRARY

NATURAL RESOURCES AND THE POLITICAL STRUGGLE

SHORT STUDIES IN POLITICAL SCIENCE

Richard C. Snyder *Consulting Editor*
Professor of Political Science, Northwestern University

Political Community at the International Level: Problems of Definition and Measurement
Karl W. Deutsch, Massachusetts Institute of Technology

The Revolution in American Foreign Policy, 1945–1954
William G. Carleton, University of Florida

France: Keystone of Western Defense
Edgar S. Furniss, Jr., Princeton University

The Problem of Internal Security in Great Britain, 1948–1953
H. H. Wilson, Princeton University, and Harvey Glickman, Harvard University

Germany: Dilemma for American Foreign Policy
Otto Butz, Swarthmore College

Democratic Rights Versus Communist Activity
Thomas I. Cook, The Johns Hopkins University

The Role of the Military in American Foreign Policy
Burton M. Sapin, Princeton University, and Richard C. Snyder, Northwestern University

The Social Background of Political Decision-Makers
Donald R. Matthews, Smith College

Readings in Game Theory and Political Behavior
Martin Shubik, Princeton University

The American Vice-Presidency: New Look
Irving G. Williams, St. John's University

Contemporary International Law: A Balance Sheet
Quincy Wright, University of Chicago

The Political Process: Executive Bureau—Legislative Committee Relations
J. Leiper Freeman, Harvard University

The Fate of the French Non-Communist Left
E. Drexel Godfrey, Williams College

Laws as a Political Instrument
Victor G. Rosenblum, University of California, Berkeley

The Political Novel
Joseph L. Blotner, University of Virginia

Modern Colonialism: Institutions and Policies
Thomas R. Adam, New York University

Rural Versus Urban Political Power
Gordon E. Baker, University of California, Santa Barbara

Modern German Political Theory
Otto Butz, Swarthmore College

Natural Resources and the Political Struggle
Norman Wengert, North Dakota Agricultural College

Federal Courts in the Political Process
Jack W. Peltason, University of Illinois

Security and Liberty: The Problem of Native Communists, 1947–1955
Harold W. Chase, Princeton University

Studies in Scope and Methods

The Study of Public Administration
Dwight Waldo, University of California, Berkeley

The Study of Political Theory
Thomas P. Jenkin, University of California, Los Angeles

Problems of Analyzing and Predicting Soviet Behavior
John S. Rashetar, Jr., Princeton University

The Study of Comparative Government
Roy C. Macridis, Northwestern University

The Study of International Law
Percy E. Corbett, Princeton University

The Study of Political Parties
Neil A. McDonald, Douglass College, Rutgers University

SHORT STORIES IN POLITICAL SCIENCE

NATURAL RESOURCES and the POLITICAL STRUGGLE

By NORMAN WENGERT
North Dakota Agricultural College

55-11063

DOUBLEDAY & COMPANY, INC.
Garden City, New York, 1955

320.3
I 727
no. 24

COPYRIGHT ©, 1955, BY DOUBLEDAY & COMPANY, INC.

This book is fully protected by copyright, and no part of it, with the exception of short quotations for review, may be reproduced without the written consent of the publisher.

All Rights Reserved

LIBRARY OF CONGRESS CATALOG CARD NUMBER 55-11063
PRINTED IN THE UNITED STATES OF AMERICA
AT THE COUNTRY LIFE PRESS, GARDEN CITY, N. Y.

Contents

Chapter One. Natural Resources and the Political Process

Decision-Making Affecting Natural Resources 1
Characteristics of Resource Politics 3
The Role of Science 3
The Role of Planning 5
The Role of Government 6
The Role of Groups 7
Interest Groups and the Political Struggle 8
Attitudes toward Interest Groups 9
Group Characteristics 10
Politics as Struggle 10
Nature of the Struggle 11
Competition for Limited Resources 11
Leaders and Strategy 12
Basic Premises of the Study 13

Chapter Two. The Roots of Resource Policy

Pre-Civil War Policies 15
Natural Resources Become a Political Issue 16
Contributing Factors 16
Boomer versus Planner 17
John Wesley Powell 18
The Conservation Movement 21
The Leaders 21
Early Stages 22
Summary of Conflicts 22
The Search for Group Support 24
Conservation Concepts 25
Wise Use 25
Balance of Nature 27
Exhaustible, Inexhaustible, and Renewable Resources 28
An Interpretation 29

Chapter Three. Resources and the Future

Importance of Prediction 31
Cases of Prediction Difficulties 32
Arizona Ground Water 32
Petroleum Reserves 33
Synthetic Fuels 34

The Materials Policy Commission Report 34
The Time Factor 35
Growth Trends in the American Economy 35
Resource Combination 36
Consumption Patterns 37
National Security 38
Free Enterprise 39
The Role of Government 39
An Appraisal of the Report 40
Planning and the Political Struggle 41

Chapter Four. Intergovernmental Relations and the Political Struggle

Federal-State Relationships 42
The Role of the States 43
Federal Interests and Federal Dictation 45
The Interstate Compact and Resource Development 45
Limitations of the Interstate Compact 46
The Port of New York Authority 47
The Interstate Commission on the Delaware River 48
The Missouri Basin Survey Commission 49
Interagency Coordinating Committee 50
Competing Bureaucracies and Resource Policy 51
Forest Service vs. Bureau of Land Management 52
The Army Engineers 52
Soil Conservation Service vs. Agricultural Extension 53
Conclusion 55

Chapter Five. The Search for the Public Interest

Conflict over Development 57
Origins of the Problem 58
The Political Economy of Natural Resources 59
The Shift from Private to Public Decisions 59
Standards for Public Decisions 60
Developing Criteria for Resource Policy 61
Cost-Benefit Analysis 61
Inter-Agency River Basin Committee Report 62
Limitations of the Subcommittee Approach 63
Investment Alternatives and Priorities 64
The Criterion of the Public Interest 64
Cynical and Idealistic Views 64
An Operational Standard 65
Search for the Public Interest 66

Footnotes to the Study 69

NATURAL RESOURCES AND THE POLITICAL STRUGGLE

Digitized by the Internet Archive
in 2011 with funding from
LYRASIS Members and Sloan Foundation

http://www.archive.org/details/naturalresources00weng

CHAPTER ONE

Natural Resources and the Political Process

The term natural resources is broad and has many connotations. It may include the entire contents of nature—the elements and compounds of the earth's crust and the air above, as well as all plants and animals. But it is not until these elements, compounds, and organisms have actual or potential usefulness that they merit consideration as much more than chemical, physical, or biotic curiosities.

Indians traversing the Mesabi range were unaware of the iron it contained and would have been unable to utilize it had they known of its existence. The iron had no utility; it posed no problems for decision; it was not a resource. American homes and industries continued to rely on wood and charcoal as sources of heat until after the Civil War, while farmers in Pennsylvania and in other coal states cursed the frequent outcrops of this mineral as a nuisance. Coal was not a resource until it had usefulness. To pioneer farmers seeking to establish homes, the forested wilderness did not represent timber resources but an impediment to be cleared away as rapidly as possible, by burning if necessary. Today wilderness areas take on significance as resources when they are used for recreation or research or set aside for future use.

It is at the point of utility that resources take on meaning and become involved in decisions and decision-making processes. The utility or usefulness of particular resources is largely a function of technology and culture. Different societies, different communities, and different periods of history deal differently with resources. The ways in which decisions concerning resource use and allocation of resources among uses are made will similarly vary. At any one time, a wide range of mechanisms for considering resource questions and for deciding resource policies comes into play.

Decision-Making Affecting Natural Resources

This Short Study deals particularly with the area of decision-making in which government is involved. It is an analysis of the way in which political processes operate with respect to natural-resource questions.

Theoretically, almost nothing is foreign to politics. The sphere of political decision is neither fixed nor exclusive. What today is decided by governmental process may tomorrow be dealt with by another mechanism, and the day after by both governmental and nongovernmental means. While Congress debates what to do about the Dixon-Yates proposition, the city of Memphis arranges

with private financial interests to build its own generating facilities, making the Dixon-Yates proposal irrelevant. Thus are public and private decisions intertwined, and there are neither principles nor formulas for determining the scope and limits of political decisions nor their relationships to other decision-making processes.

Even foreign-policy decisions, usually considered exclusively public in character, may be determined or conditioned by private action. Private investment in foreign resource enterprises may depend upon governmental decisions at home and abroad, even as the fact of investment may at a later date be the basis for complex foreign-relations issues and difficult domestic political problems.

Many societal as well as individual techniques and mechanisms for making decisions may be involved alternately or at the same time in complex and reciprocal interrelationships. The decision to open up portions of the public domain for phosphate development some years ago was a product of the political process. But this decision was part of a continuum to which a host of private and public decisions must contribute for the original decision effectively to accomplish its objective of increasing the supply of phosphate on the market. The determination that phosphate supply should be increased was itself the product of complex influences.

Decisions concerning resource utilization and allocation have a predominantly economic impact, although these decisions may be effected and often determined by factors not usually considered economical. But this generalization says nothing of the process by which resource decisions are reached. While most resource decisions will have some economic effects and can be analyzed in economic terms, it is a mistake to assume that these decisions are solely a product of the economic system or that economic decision-making and political decision-making deal with mutually exclusive subject matters. As mechanisms, they may be distinguished: they are concerned with different factors, different values, different purposes, and the location of decision-making responsibility is quite different. But even as mechanisms they must often mesh together to produce joint decisions. Certainly in terms of consequences, economic and political decisions and processes interact and condition one another.

Many decisions concerning natural resources are made by private, nongovernmental means. In some societies the role of government is insignificant, while in others it may be substantial and even dominant. In some areas of policy, public interest is minimal; in others it is overwhelming. In any case, the factors that determine the nature and scope of governmental interest in resource policy are varied and involved, government action being a function of many reciprocal influences, including the nature of the particular resources and the problems they pose. The way in which these diverse factors operate in the formulation of particular public policies is the focus of this study.

Monographs in political science traditionally emphasize the structure, procedure, or administrative relationship of government, and often give only passing attention to the substantive content of governmental activities and to the context in which public programs are developed and carried forward. Studies in the conservation and development of natural resources, on the other hand, have generally stressed the scientific or technological aspects of the subject, with little attention to politics.

This analysis rests on the premise that both facets of the problem are significant, that governmental processes can best be understood in the context of specific programs, and that comprehension of resource policies requires knowledge of political factors and forces. *What* is decided should not be separated entirely from *how* the decision is reached, for each limits and conditions the other. The locating of national forests, river control works, or areas for geologic mapping (the *what*) cannot be understood without taking into account that these decisions are participated in by the United States Senate (the *how*), where political considerations tend to encourage the distribution of projects equally among the states rather than according to economic need or technical importance.

Many political decisions have had an impact upon natural resources even when the resources were not an important element in the decision. Tariffs, labor laws, minimum wage laws, credit and fiscal policies, and virtually every statute that relates to the operation and development of the economy may have important implications in the field of natural resources. Even a noneconomic policy like education for everyone can be of vital significance to the pattern of resource use.

Attention in this Short Study is directed to those aspects of the political struggle in which natural-resource questions have been intentionally and immediately involved. It examines the way in which public policies dealing with natural resources are formulated, who the participants in the process are, what factors and influences are at work in this area of public policy, and what techniques and criteria for evaluating policy goals may be useful.

Within the space limitations of this essay, a comprehensive review of the politics of natural resources is not possible. The approach will therefore be topical, consideration being given to some of the more interesting and significant aspects of the subject. The discussion is meant to be suggestive rather than encyclopedic, and it is hoped that the presentation may stimulate fresh insights into this important area of public policy.

Characteristics of Resource Politics

An analysis of resource politics is particularly rewarding because this field of public policy illustrates well the interaction among individuals and groups, ideas and beliefs, knowledge and ignorance, fact and fancy, institutions and environment in the processes of government. Like the warp and woof of a fine tapestry, decisions in this field are made up of many elements and influences, crisscrossing and interacting, yet not without pattern and design. In addition, resource politics are characterized by a number of factors that create special, almost unique, problems. Hence a study of how the political process operates in this field may have particular interest and value. Several of these characteristics merit special comment.

THE ROLE OF SCIENCE Science and technology have always had a dominant place in resource decisions. There is reason to believe that in no other area of public policy has the practice of relying on research and scientific data as a basis for decision been more pronounced. In no other field, however, is there greater confusion between the role of the scientist in providing information relevant

to policy decisions and the role of the political process in combining such information with value judgments, program goals, and preferences in order to reach a policy decision.

The questions, for instance, of where a dam could be built, how large it could be, and how much power it might produce are technical questions in the proper domain of the scientist. But the questions of when the dam shall be built, how its power shall be used, who shall pay for the structure and how much require policy decisions based on values and beliefs as well as technical data, and the political process is peculiarly suited to making this type of choice.

In the field of resource policy, there has been a pronounced effort to rationalize programs and proposals in scientific terms and to cite the authority of science as justification for particular policies. In no other field is the role of the expert more significant, and concomitantly the tendency to abdicate private, lay judgment in favor of the specialist more evident.

It is important to note, too, that the scientists and the experts have by no means always been right. At times they have grossly overinterpreted their data and gone beyond what logical inference would permit. The specialized requirements of scientific methodology, moreover, have often stood in the way of integration and comprehensive policies and encouraged a neglect of important human values. When technicians have ventured away from their data into the arena of politics, where values and preferences are often determining, they have had particular difficulty.

The history of resource policy is the history of science and technology in the service of the nation. The political struggle marking that history has involved scientists and intellectuals whose object largely has been to convert the public and the politician to a recognition of the importance and significance of the results of science. The struggle represents the deliberate attempt of intelligence to subdue and control the environment.

Henry Adams called the 1867 law, which authorized the King and Hayden western land surveys, America's "first modern act of legislation." One might argue whether it was this particular law, the creation of the weather bureau in the previous decade, the establishment of the National Academy of Science, the organization of the Department of Agriculture, or the provision for land-grant colleges which marked the entry into a new age. But certainly a turning point in the formulation of public policy was reached about the middle of the last century—a significant turning point for all public policy but especially natural resource policy. At this point in history Congress, the Executive, and others concerned with policy began to turn to scientific research and investigation and to use scientific method for identifying resource problems and for formulating programs for dealing with them.

Fundamental conflicts developed between those who sought to know and determine the future, to anticipate scarcities through rational analysis and calculation, and, on the basis of this knowledge, to determine resource allocations deliberately and thoughtfully, and those who for many reasons preferred to continue relying on private action and drift and to meet new problems on an *ad hoc* basis, improvising as the situation seemed to require. This conflict remains a chief characteristic of resource politics today and will be given further attention in subsequent chapters. It is a mistake, however, to describe conflicts over resource policy merely as struggles between good and evil or

knowledge and ignorance, for the situation is fantastically more complex than these simple categories suggest.

Often bitter conflicts have arisen because of inadequate information or because of the myopia resulting from specialization. The debates over whether multipurpose dams can serve both flood control and power generation purposes or whether the quantity of water in the Missouri River is adequate for both upstream and downstream plans are in this category.

The status of knowledge at a particular time has been a vital factor in resource policy and has often determined the limits of political action. Programs seeking a readjustment in land use from row to cover crops, for instance, were not feasible in the South until livestock could take the place of cotton and corn. But livestock was not an economic farm enterprise in most areas of the South until endemic Texas cattle fever was eliminated. And cattle fever could not be eliminated until entomologists identified the cattle tick as the carrier of this debilitating animal disease.

As in most human struggles, the issues are not always clear, and the cause of science has often attracted a host of camp followers whose interests are neither in science nor in sound policy. Much of the initial impetus for irrigation in the West, for example, came from professional investigators seeking sound water-development and effective land-use policies. But very early local interests, promoters and speculators, all but scuttled the cautious, logical approach of engineers and scientists.

Emotion, prejudice, and selfish interest, as well as ignorance and stupidity have at times characterized the conflict, and often goals and high purposes have become confused, distorted, and forgotten. Thus when Gifford Pinchot sought to formulate a national water policy in 1908 and 1909, he had the support of the Great Lakes-to-Gulf Waterway Association. This group was not really interested in general water policy, however, but in achieving their particular commercial purposes. As a result, the new interest in waterway development which dates from this period soon degenerated into simple pork-barrel politics.

THE ROLE OF PLANNING Another significant characteristic of the political process in its dealings with resource policy is the extent to which planning has been an important factor in reaching decisions.

By planning is meant the systematic application of analytical techniques in the identification of problems and the thoughtful and deliberate preparation of solutions. Planning, in this view, is not a theory of government nor a philosopher's stone providing answers to all policy issues. It is, rather, a means for marshalling relevant facts and applying available techniques in order to secure wiser decisions.

Planning can and does occur at many points in the governmental structure, and, like everything else in the governmental process, can be thorough or superficial, competent or incompetent. It may deal with the short-range or with the long-range, with determining and clarifying ends, or merely with their implementation.

The extent to which planning is characteristic of particular policy areas is a result of a combination of factors. To the question of how the planning job can best be carried out there is and can be no single or simple answer.

Perhaps because resource policy has been intimately related to science and the use of research data and because scientifically trained men have been leaders in the resource policy field, planning techniques have been emphasized as means for identifying resource problems and preparing solutions for them. Those concerned with resources have been firm in the belief that man might, by taking thought, influence, if not control, the course of events. The issue today in the field of resource policy is not whether there shall be planning, but rather who shall plan and to what ends.

Much political analysis and considerable support of planning is based upon an unarticulated major premise that, if reason prevailed, only right decisions would be made, that if we knew enough, politics and parliaments would be unnecessary. To many, this planned society represents the ultimate, Platonic state when philosophers will be kings. This conception of planning is emphatically rejected as confusing the methods of planning with the results that can be attained. Like the idea of the withering away of the state, the apotheosis of knowledge and reason has been a trap into which many social scientists have fallen, for only in a utopian world will pure reason control the complex factors now relevant to decision-making.

Several points in this connection illuminate the practical aspects of decision-making and suggest some of the limitations on the decision-maker. First of all, in many situations relevant information may be lacking. In any case, the policy-maker is at best dealing with probabilities—probable events, probable actions, and probable outcomes—for policy by definition deals with the future. In this context, the notion that there is only one policy that will meet the test of rationality cannot be supported.

Policy decisions rarely deal with simple cause-and-effect relationships; instead the policy-maker must face multiple causes and multiple outcomes. Often side effects and secondary consequences are not and cannot be anticipated. In some decision situations, goals may be unclear, values indeterminate, and criteria for assessing the relation of means to ends uncertain. In other situations, all possible alternative courses of action may be unknown or undetermined. Hence prediction of possible outcomes must be less than certain.

The decision-maker is, in short, acting under conditions of uncertainty, created in part by limitations of knowledge, in part by limitations of time, and in part by limitations of techniques. Problem-identification and problem-solution in the area of resource policy can obviously be improved by use of planning techniques—by logical analysis and rational calculation. But planning should never be confused with certitude. Rational techniques for identifying resource problems and preparing proposed solutions cannot assure correct answers, but must deal in terms of approximations and probabilities. The technique used may represent the highest level of rationality; it may be mathematically precise. But the nonrational and irrational aspects of human behavior must also be included as a part of the matrix from which policy decisions will flow.

THE ROLE OF GOVERNMENT Another characteristic aspect of resources politics is the extent to which governmental action has been accepted as necessary and desirable.

Partisan declarations to the contrary, the governmental process is not called

into use for reasons of sport or because of sinister plots of underemployed bureaucrats. Use of political processes for reaching decisions arises from specific circumstances and situations. It is a result of concrete problems, and the determination of what is and what is not a proper subject for governmental concern and political decision may be based upon many different factors, including the pragmatic judgment that a specific problem can thus best be solved and particular goals most effectively achieved.

For the wheels of the political process to begin turning, however, a problem must be recognized; a need must be felt by some individual or some group, a desire for action expressed. This is what the political process is all about. This is the essence of governmental decision-making, for a major function of politics is choosing means as well as ends, deciding the scope and direction of governmental activity at any particular time.

Much political and economic theory has dealt with what the government should or should not do, with the limits that should be placed upon governmental administration. These questions have provided the subject for much political debate, and to some they reflect the burning issue of our times. Certainly there is no general agreement with respect to the proper sphere of government, for traditions, values, the personalities of decision-makers, environment, and many other factors seem to influence the choice of governmental means to solve particular problems. As will be indicated in subsequent chapters, issues of this sort have been of considerable importance in the politics of natural resources, and there has been extensive debate on whether the government should or should not act.

But reliance on abstract ideas and philosophies and the use of closely reasoned dialectrical arguments as a basis for action has not been typical of resource politics in America. The approach to resource problems has been characterized rather by a high regard for a pragmatic appraisal of cause and effect, of costs and benefits, and a willingness to experiment and to consider alternatives free from doctrinaire shibboleths that have blocked democratic action in other countries. Unquestionably, an interest in problem-solving and a concern for facts has been an important influence in resource politics. This attitude, in turn, has been reflected in the extent to which resource questions have been appraised in terms of the public interest and the use of governmental means considered free from preconceptions.

THE ROLE OF GROUPS The final characteristic aspect of resource politics meriting special comment is the nature and extent of group interest and activity in this field of policy.

Group activity on natural resource questions has been exceptionally diverse. There are, of course, the usual type of pressure groups whose interests are largely economic. These often are in conflict with one another as each seeks his particular advantage. Of a somewhat different character are the groups whose interests are esthetic or cultural and who are concerned with the preservation of natural sites. These groups are sometimes allied with those who promote hunting, fishing, and recreation generally, and together they seek to set aside parks, wilderness areas, and game preserves, and to establish regulatory programs to preserve and protect particular resources. At times these groups, too, find themselves in disagreement. Finally, and not to be dismissed, are the well-

intentioned and public spirited groups who seek policies and standards of resource development and conservation to which the wise and honest can adhere.

A second quality of group politics in the resource field is its intensity and inflexibility, suggesting attitudes more frequently associated with religion than with other spheres of human activity. Perhaps this positiveness as to the rightness of a particular course of action reflects the scientific base of many resource proposals and is an expression of the tendency, already referred to, of justifying programs and policies in scientific terms, overinterpreting data and overextending the conclusions which the data warrant. Yet from this fact flow some of the most difficult problems of group politics.

Certain other characteristics of group politics in the resource field might also be noted briefly. One is oversimplification and the tendency to prescribe particular nostrums as cures for a host of complex problems. Equally difficult to deal with is the boomer or promoter psychology which underlies group interest in certain kinds of resource policies. These attitudes are often coupled with an intensely local interest which arises because resources are, in the first instance, associated with particular pieces of geography. Finally, group activity in the resource area is directly, deliberately, and openly tied to public agencies and the administrative process. Group relationships to government, which in business or labor might be questionable, in the resource field are considered standard operating procedure.

Interest Groups and the Political Struggle

The limited effectiveness of the individual in present-day American politics and government cannot be denied. This is a result of sheer numbers, of geographic expanse and cultural variation, of the complexity of society and the concomitant specialization in its organization and functioning. Reliance on the expert even in making political decisions seems to be an inevitable result of the complexities of modern life and of the expanding and pervasive influence of government.

Nationally, the ratio of one to one hundred and sixty million would seem to establish the point of individual insignificance; even in the average Congressional district he is one among four hundred thousand. His isolation may be intensified, moreover, by the fact that those with whom he might make common cause are one, two, or even three thousand miles away.

This is, of course, the context in which organized groups have proliferated and group activity increased. With the success that groups have had in achieving their goals has come an intuitive recognition of the need for and advantage of organization in dealing with the problems of government and politics.

It is currently fashionable in the literature of political science to emphasize the importance of groups in the process of arriving at political decisions, and group theories are proving useful in analyzing many aspects of the political process. Because group activity is particularly important in the field of resource policy, a résumé of the principle elements of group theory clarifies the conceptual framework for subsequent chapters.[1]

ATTITUDES TOWARD INTEREST GROUPS Although sociopsychological research has developed detailed information and insight into the complexities of group structure and interaction, for present purposes the group concept may be simply defined as a convenient way of describing individuals acting together for more or less agreed-upon purposes. The designation "group" might thus be applied to a wide variety of private organizations, to political parties, and even to government agencies, the characteristics of a group emerging from the fact of agreement among the individuals involved.

Political parties and pressure groups have, of course, been studied before the current emphasis on the group basis of politics. But to a large extent earlier consideration started from premises of nineteenth-century liberalism which, in politics as in economics, stressed the individual and his place in the political sun, and were generally oblivious to developments or conditions that appeared to depreciate the status of the individual.

Several consequences of this liberal attitude are worth noting. The citizenry were deeply suspicious of political parties and of lobby and pressure groups, an attitude which still persists today. Scholars neglected certain important areas of investigation and particularly failed to develop a realistic and meaningful theory of group political action.

The views of James Madison with respect to the dangers of "faction" dominated political thought and practice throughout the nineteenth century, for most Americans regarded political parties as necessary evils rather than as essential mechanisms for democratic government in a complex society. Even today, politics as a career remains of questionable dignity, and the label "politician" is often an epithet.

This ingrained mistrust of politics and political parties is reflected in the strong allegiance to nonpartisan elections and in the high regard in which the independent is held, for party regularity is suspect. This same attitude was evident in the fact that, until quite recently, most college courses in political parties, in the tradition of the Muckrakers, stressed boss rule and machine organization, to the virtual exclusion of a broad consideration of political processes as integral and necessary parts of governmental decision-making.

Madison's recognition of economic interest as a basic factor in political motivation is frequently cited with approval as indicating his political sophistication. But in failing to recognize that organization of interest groups was a normal concomitant of this fact, Madison and many equally astute students of politics reveal the extent to which politics has been treated entirely as a matter of individual action and the role of the group slighted. In this view, political decisions were derived entirely from the consensus of individuals, and organization was merely to be tolerated as an attendant evil.

In this climate of opinion it is not surprising that Madison's fears of organized economic interests, like his fears of political parties, dominated American political mores for many years. Just as politics and politician have had strong negative connotations, so lobbies and interest and pressure groups have been derogatory terms. This is an anomaly of present-day American political life, for reliance on group organization as a means for securing action from Congress and from the Executive is accepted practice. There is also an implicit, though nevertheless general, acceptance of the fact

that the individual is largely ineffective in seeking governmental consideration. Yet lobbying (except one's own) is often looked upon as improper, and to accuse a politician of giving in to the pressure of lobbyists remains an effective way to discredit him.

In the public mind a connection is rarely made between the right to petition for the redress of grievances and interest-group activity and lobbying, because it is assumed that the petition for redress is spontaneous citizen action, while lobbying is organized manipulation and connivance. The former is in the tradition of the initiative, referendum, and recall, while the latter suggests propaganda and huckstering.

GROUP CHARACTERISTICS In a democratic society few, if any, of the groups participating in the struggle for power are close-knit organizations in which the membership follows the policies and decisions of the leaders without question. Rigid discipline is not a characteristic of American groups. Moreover, the groups involved in the political struggle are usually not economically homogeneous, and most individuals identified with a particular group may also be members of other groups which have conflicting or tangential purposes. This suggests why the Marxian concept of class struggle does not fit the American scene. While group activity is frequently related to the economic interests of the group and its members, motivations are much more complex than the Marxian dogma implies, and member interests are broader than those of a single group. Even when the political struggle involves a conflict between labor and capital, as in the case of the Taft-Hartley Act, class struggle interpretations are just not adequate.

Two reasons may be identified as in part explaining the fact that groups in American society are not characterized by rigid internal discipline nor by strict hierarchal control. They may at times be manipulated and misled, but seldom are they run like a military corps. One reason is that deeply imbedded in American political mores is the right of private judgment. A product of the Protestant revolution, this fundamental principle has been nourished by ideas of science and scientific method, by the egalitarian forces of the frontier and of American political life generally, and by the universality of American democratic education with its stress upon equal treatment and equal opportunity. The second reason lies in the character of group structure which results in competition among groups for members and for support. The bolt and the walkout are found not only in political parties but among all organized groups, and adhering to the party line is an epithet in all group struggles.

Patterns of group membership have, of course, been identified, so it is possible to predict that a labor leader is not likely to be a charter member of a chamber of commerce. At the same time, the great variety and diversity among groups and the competition for individual support helps maintain a desirable flexibility comparable to the buyer's market in economics. This is undoubtedly an important characteristic of the open society, and at least a partial answer to those who fear that the individual and individual values will be entirely lost in a complex, highly organized group society.

POLITICS AS STRUGGLE If the importance and necessity of group activity in the governmental process is accepted, then the next step is to consider the nature of group activity and group interrelationships. The limited scope of this

Study does not permit a comprehensive review of the subject. The reader interested in a more detailed and thorough analysis of group politics is referred to longer works on this subject, including David Truman's *The Governmental Process*[2] and Bertram Gross's *The Legislative Struggle*.[3] Here only a few more important aspects of group interaction will be explored.

A consideration of government as a process for resolving conflicting interests and choosing goals brings into focus the importance of the centers of power and points of decision-making. In the American system these centers are dispersed and diffused, with change, adjustments, and realignments occurring constantly. The content and direction of public policy is thus a function of the *location* of decision-making power with respect to particular programs or activities and access to the points of decision is the primary goal of group activity.

Nature of the struggle The term struggle describes an essential aspect of the governmental process and, as Gross suggests,[4] should be as useful to political analysis as the concept of competition has been to economics. The struggle is for access to points at which governmental decisions are made. The groups participating in the struggle are seeking to influence, if not to determine, governmental policy. Their objectives are to secure program and administrative decisions in harmony with, or at least not in opposition to, their own group position. In simplest terms, the struggle is for power—power to influence and control factors of major, even vital, importance to the group and to its members.

Several important aspects of the concept of struggle should be noted. The political struggle is more often *for* something than *against* other groups. It is a struggle for advantage and position rather than a fight with specific adversaries. It may also involve the protection of the *status quo* and a desire to veto change. At the same time, the success of one group may mean the failure of another, so conflict and hostility among groups may incidentally exist, although it is not often an immediate goal and end in itself.

Moreover, political struggle does not usually involve physical combat or heated conflict. On rare occasions the struggle might degenerate into local riots or even civil war, as in 1861. More often, however, the struggle is based upon winning friends, alliances, and alignments as a means of influencing the course of governmental decisions. Typical weapons are discussion and debate, persuasion and education, propaganda and advertising; and decisions are usually reached by conference negotiation and ballot, rather than by means of the blackjack or tommy gun.

In many instances the struggle can perhaps be compared to the pushing and shoving that occurs at a bus stop during the rush hour. Each passenger is intent upon gaining and securing a seat, and the ensuing struggle is not deliberately planned nor are adverse results intended or anticipated. Yet only a few will gain seats; some will have to stand; and still others may not get on at all. But the latter usually bear no lasting grudge against those who are seated, and these do not regard the less successful participants in the struggle as opponents or adversaries.

Competition for limited resources The budgeting and appropriations process illustrates this aspect of the struggle. At any given time funds available for public expenditure (like seats in a bus) are limited. This is axiomatic, for the

financial resources of government are rarely sufficient to provide for all the activities and programs which in themselves may be sound and desirable. Hence by means of the budgeting and appropriations process some activities must be curtailed, others eliminated. Priorities are determined and funds allocated. In seeking more money for highways, for instance, the better roads associations may push demands for aid to education into the background. Those seeking irrigation dams may, if successful, adversely affect appropriations for fisheries research or soil conservation. Although the adverse consequences in these situations were unintended, they are none the less real. But the important point to note is that the struggle in situations of this sort is not directly and immediately between competing groups, although this may be an incident of the struggle.

Patterns of group political action and reaction are by no means uniform. The scope of interest of particular groups may vary from a concern with general policy questions in broad fields of governmental activity to a narrow interest in particular legislative or administrative decisions. The intensity of interest may also cover a similar range. A lumber dealers' group may pay attention only to problems dealing directly with lumber production and marketing. It may also be concerned with public policies affecting home construction and even with programs influencing the condition of the economy generally. To argue that such a group *ought* to be concerned with all of these problems because of the interdependence of our society misses a basic characteristic of group functioning, namely, that the broader the range of interest and activity, the more difficulty a group has in holding its members or in arousing them to effective and concerted action. It is in this context that the problem of group leadership and the questions of group strategy and tactics become especially important.

Leaders and strategy All groups, with few exceptions, are dependent upon leaders. Occasionally, perhaps, a spontaneous mass organization of public opinion may occur. But even the spontaneous protest meeting soon selects officers and finds itself being led by those able or willing to articulate a position which all or most of the group can accept. Inevitably, then, definition of group objectives and determination of group strategy and tactics is a major function of leadership. This would seem to be axiomatic, but, of course, it says nothing about whether particular leadership is responsible or irresponsible, wise or foolish, principled or chauvinistic. Nor does it indicate the extent to which leaders may themselves be restricted by the nature of the group, its membership, its structure, and its inherent characteristics.

For example, in determining the strategy which a group will follow, the leadership will be restricted by what the group will be willing to accept. An economic interest group may consider tactics that come close to bribery, while a religious group would shy away from materialistic influences, perhaps being content to rely on threats of eternal retribution. Group characteristics may similarly restrict leaders to direct political action focused upon legislative enactment of a particular bill. They may permit attempts to influence an administrative agency or official, or they may allow subtle long-range propaganda and public education.

The size and interests of the membership, the factors that gave rise to the

creation of group organization, the intensity and homogeneity of member involvement, the financial strength of the group, all influence the scope and activity range of the group and of its leaders. The ability of the leaders and the amount of effort they are able to put forth is similarly important. Moreover, the particular circumstances and environment in which the group is operating will have a determining effect upon the scope and range of group activity. The valuations and beliefs of the members and the cultural traditions and mores of the society in which the group is active will also be significant.

Basic Premises of the Study

The view of the political process underlying this study stresses its pluralistic character. Governmental decisions thus occur at many points in the organizational structure, often in striking contrast to formal patterns which constitutions and laws set up. Of considerable importance to the process, moreover, are the activities of the many groups seeking to influence, direct, or control particular decisions.

To those who seek neatness, regularity, and system in the political process, this view is disturbing. The group struggle often appears to be without principle or intellectual content, and power seems to be an end in itself. The diversity of individual and group goals and the hetrogeneity of individual and group values seem to contain seeds of disunity and social disintegration.

These fears cannot be eliminated, but certainly it is no answer to hypothesize another type of world in which the processes of government operate simply and rationally. Unquestionably, the dreams of the rational idealist have always been attractive, but they have not been in accord with reality.

It is a premise of this study, moreover, that policy itself is pluralistic, meaning that there now is no single all-embracing resource policy and that to hope for it is futile. Actually, there are many policies of differing levels of importance, often not entirely consistent with each other. But consistency is sought only by the person who desires synthesis and who is certain that his own views are right. The position of this study is that knowledge is at best fragmentary and severely limited. The unknown is still so much greater than the known that a positive position on what is good and right would hardly seem warranted. Perhaps ultimately policy-makers will know enough to decide questions which come before them on the basis of final wisdom, but until then pragmatic tests of observed results in specific situations will have to suffice as the measure of public policy. The choices, in any case, are among realizable and attainable alternatives, and the opportunity for effective action generally exists only at the margins of the problems with which policy is concerned.

The limits on rational calculation and control must be recognized, for with such recognition do the value and validity of democratic processes emerge. The group basis of politics and the political struggle makes particular sense just because of these limits on knowledge, rational calculation, and control.

The problem is not one of substituting political processes of decision-making for cold logic and right reason, but of using techniques which alone can prevent error from masquerading as truth. The choices are not between a society governed by scientific fact and one of anarchic chaos, but between an open society which seeks knowledge and uses reason, which does not reject rational

solutions but avoids oversimplifications, which rigorously tests its premises as well as its conclusions, and, on the other hand, a static society veering alternately from faith to nihilism, from brash overconfidence in the rightness of its position to meek acceptance of an evil world.

The key to sound policy lies not in absolutes or ideals but in maintaining a flexible system dedicated to a constant appraisal and reappraisal of policies and programs in terms of their pragmatic effect upon the public interest. While rejecting abstract concepts of the public interest as of little use, this study does urge that it is the search for the public interest that will more nearly result in sound policy. The test is an operational one, taking into full account the limits and limitations relevant at any particular time.

CHAPTER TWO

The Roots of Resource Policy

The first chapter emphasized that resource use is a function of human life and that with utilization comes the need for policy decisions. The basic problem of resource policy in the past as in the present is one of allocating resources in space and over time, among present claimants, and between those now living and those to come.

In this sense, resource problems were posed as soon as man appeared in America. Certainly from the point of view of current civilization, the resource problems of the United States can be traced to the seventeenth century when European settlers first appeared. But by and large the resource problems of early America were not public or governmental. They were dealt with primarily on an individual and private basis.

Perhaps one of the prerequisites for bringing resource policy to public attention is scarcity or shortage, actual or potential, real or imagined. Allocation problems do not arise in very complex form so long as there is more than enough of a particular resource to go around. When there is not enough, public policy issues begin to be identified, and the governmental process comes into play.

Pre-Civil War Policies

Prior to the Civil War many public programs and policies were discussed and adopted which had far-reaching implications for the conservation, use, and disposition of the nation's natural resources.[1] The most important resource question confronting the nation in this period was that of the public domain. But the supply of land was plentiful, and the policies that resulted in the disposition of the public domain only incidentally dealt with land use and allocation in relation to production, future needs, or similar concepts now associated with resource policy.

Land was disposed of to take care of the veterans, to fulfill the nation's Manifest Destiny, to provide land-hungry immigrants with family-farm units, to span the continent with railroads, to encourage education. All of these policies may have been proper and desirable, but the point emphasized here is that they had other purposes than the establishing of resource policies. These land programs had some impact upon the allocation and use of the land resource, but in most instances this was a secondary consideration. Most often

the consequences of these policies for resources were unanticipated and unanalyzed.

In the early days of the Republic, when salt was a critical mineral, Congress reserved the land containing salt licks for general public use. Similarly, an early concern for a steady supply of ship timbers, masts, and naval stores resulted in abortive attempts to control forest depletion and to encourage tree culture. A diminishing supply of firewood in a few communities, and a failing supply of game, also led to early attempts to restrict exploitation of these resources. But these were scattered examples of a deliberate concern for resource policy.

Hamilton's espousal of tariff legislation to encourage manufacturing in America had a far-reaching impact upon the resources of the nation. Tariff protection has undoubtedly had both direct and indirect effects upon the nation's resource base. Government fiscal policy—the assumption of state debts, the creation of the national bank, money and credit policies—has been and always will be of vital significance to resources. Undoubtedly, too, developments in corporation law in the last century were a source of many subsequent resource problems. Yet these policies and programs were not adopted because of their impact upon resource use and conservation, but for other reasons. This fact provides the basis for distinguishing the ante-bellum from the post-bellum period, for the post-bellum period not only saw a deliberate development of resource policies but an increasing use of science and technology in the processes of policy formulation and decision.

Natural Resources Become a Political Issue

The time was fast approaching when land and other resource questions would become major political issues and would have to be dealt with directly. A number of factors contributed to this changing situation.

CONTRIBUTING FACTORS The first, already referred to, was the tremendous increase in scientific knowledge and in knowledge about the nation's resources. From knowledge came concern, and concern was a stimulus to action. The seeds planted in the field of science just before and immediately after the Civil War bore fruit in many ways. Many scientific organizations were founded in this period, and scientific and technical education made substantial advances. Outstanding were the establishment of the Geological Survey in 1879 and the creation of the Agricultural Experiment Stations ten years later. The development of professional forestry and the establishment of schools of forestry was part of the picture. Also significant were developments in economics, political science, and sociology which directed the attention of scholars to the structure and mechanisms of society.

These trends had many consequences. One was the expansion of government science with the creation of numerous scientific bureaus and agencies and increased financial support for their work. Policy-makers turned more and more frequently to these scientific agencies for help in identifying problems and in formulating solutions. Perhaps more important in the long run was the fact that government science had built into it a strong bias in favor of the general interest and against private gain and special interest. This was evident in the growing concern with resource exhaustion at the end of the century,

especially with respect to lumber and other forest products but it was also voiced in connection with other important resources. In the minds of some, the need for public attention to this problem of exhaustion was highlighted by the closing of the public domain.

A related factor that worked to bring resource policy issues to the fore was the growth of technology and of new industries. The burgeoning electric power, petroleum, and chemical industries contributed a new dimension to resource problems. As older manufacturing businesses grew larger, they too became concerned with resource allocation and use. Closely related to the technological evolution of the period was the growth of scientific industrial management. The effort to apply scientific method to production problems had far-reaching significance for resource use and contributed some important concepts to resource policy. For one thing, waste and inefficiency began to be regarded as immoral, and conservation acquired a moral sanction. It was inevitable, too, that efforts to track down waste and inefficiency would in many cases lead to resource questions and point to the need for new public policies or revision of existing ones. Many of the men active in the scientific management movement were also leading supporters of conservation.

Finally, the radical changes in the character and structure of the American economy at the end of the last century contributed to an environment which encouraged a growing concern with resource policy. The tremendous accumulation of capital and its management by corporations began to introduce a time consciousness into American business so that, among other things, a "cut-and-get-out" resource policy made less and less sense. At this time, too, the United States was changing from a debtor nation to a creditor nation and from a raw-material exporter to a manufactured-goods exporter. Although popular social and economic views were still dominated by social-Darwinist thinking, extensive programs of government economic intervention were in the offing. Certainly the mass of the public held no strong antigovernmental views, but on the contrary was willing to turn to political action when this seemed an effective way to deal with the problems of the age.

BOOMER VERSUS PLANNER American policy with respect to natural resources has also been marked by strong anti-intellectual influences. At times, there has been deliberate rejection of the rational, the logical, the analytical approach to resource problems and acceptance of patent-medicine cures of pitchmen and hucksters. By and large these anti-intellectual influences have not been negative or nihilistic but rather hopeful and exhuberant. Faith in the excellence of his product is not only typical of the brush salesman but also of the purveyors of Manifest Destiny. "Pie in the sky by and by" has been the sophisticate's characterization of the lunatic fringe of religious revivalists, but it also applies to the thousands who set out ill-equipped and unprepared for the unknown West, many to meet their deaths en route to the hoped-for paradise.

Throughout American history an unstated major premise of many public policies affecting natural resources has been a trust that everything will come out all right, that particular resources are limitless, that predictions and warnings of possible catastrophe are merely the voices of Cassandras who fail to appreciate the true genius of America and the destiny of the American people. The

strange aspect of this phenomenon is that it occurred in a culture seemingly dedicated more than any other to science and technology. In fact, of course, the application of science and technology in the United States has been pragmatic, specifically limited to particular purposes. The values of the age of reason never became a dominant motif of American resource policy in the nineteenth century.

In part, the rejection of the advice of the scientist and technician arises from a sound skepticism, justified by experience, regarding the infallibility of the expert. In part it stems from the egalitarian beliefs of nineteenth-century America which dismissed the need for any experts. It reflects that abiding faith in a greater future, despite all odds and all reason, which continues to be a major aspect of our culture.

"Rainfall follows the plow" was the slogan used to exorcise the facts of inadequate moisture west of the hundredth meridian, and "next-year country" continues to reflect the hopes of those seeking to farm in the precarious rainfall areas of the Northern Great Plains. These are dramatic and extreme illustrations of this national penchant for hoping against hope. In more complex forms it was present in many of our great national developments and it is no wonder that conservative techniques of careful analysis and appraisal have received only half-hearted attention.

Take railroad land grants as an example. Almost 10 per cent of continental United States was granted to the railroads as stimulus or reward. What was the basis for these extensive plans to span the continent with rails and to link every hamlet with every other? Clearly not traffic immediately in prospect, nor a reasonable hope of traffic to come. In terms of current resource economics, had costs and benefits been calculated and construction been based upon anticipated benefits exceeding costs, many of the railroad lines would probably not have been built. Railroad development, representing extensive and imaginative use of science and engineering, was based largely upon the premise of American growth and prosperity. Engineering and science were applied only to physical lay-out and construction and not to questions of economic soundness.

To the question of whether American industrial and economic development would have been retarded by a different railroad policy there is no answer. One wonders, however, if the financial difficulties of the railroads in the twentieth century do not in part reflect the failure to do more planning and less booming. Yet this is the psychology of every chamber of commerce in the land. It has been the basis for much of the navigation and flood-control program of the Corps of Army Engineers since the Corps first started building navigation works over one hundred years ago.

At times, private greed can be identified as the major force preventing rational appraisal of alternatives and analysis of consequences in new undertakings. Again, lack of analytical tools and techniques and inadequate knowledge may make a calculated course impossible. But pervading all of these situations is the will to believe that everything will come out all right. The boomer knows in his heart that his judgment as to the success of his venture will be proved sound.

JOHN WESLEY POWELL Symbolic of this national rejection of scientific opinion with respect to resources were the experiences of John Wesley Powell and Gifford Pinchot. The parallels in their careers are significant. Both repre-

sented the application of science to major resource problems. In both instances an approach to resource policy based upon careful consideration of facts and appraisal of consequences, upon planning and logical program formulation, was rejected and both men were dismissed from office under somewhat similar circumstances. The boomer was preferred to the planner.

In Wallace Stegner's definitive study,[2] Powell emerges as the prophet and symbol of the new age. So typical were the problems with which he struggled, so characteristic was his approach, and so uniformly patterned was the political struggle in which he became involved that a brief appraisal of Powell's experience (based largely on Stegner's study) will contribute to an appreciation of the early political struggle for sound resource policy.

Throughout a career of government service that extended over thirty years, including field service as head of the first survey party to explore the Colorado and the directorship of the Geological Survey and the Bureau of Ethnography, Powell most frequently stood for foresight and knowledge in place of sentiment, fear, and legend; investigation and planning instead of hunch, rumor, and drift.

In Powell's time the public domain continued to pose critical resource issues. Most of the remaining public domain lay in the arid West, and this very fact should have made clear the need to depart from traditional policies which stressed small homesteads. It was believed, however, that institutional patterns and land-use practices of the humid eastern United States could be transplanted to the western lands, even as they had been carried westward from the seaboard with each new wave of settlement. Bitter experience was ultimately to discredit these assumptions in areas of dry-land farming. Even where new institutions and new traditions to meet the exigencies of irrigation agriculture were painfully evolving through trial and error, the limitations of private individual effort or informal community cooperation were increasingly apparent. Doubts were ultimately to multiply as to whether irrigation of arid lands on a haphazard and random basis could meet the requirements of regional development. Increasingly the unsolved problems of water use pointed to the need for governmental action based upon scientific data with respect to water supply and control.

Long before the realization of these facts began to be reflected in public-policy discussions and ultimately in public-policy decisions, they had been pointed out by John Wesley Powell, first in his report in 1878 on the arid lands[3] and subsequently in speeches, reports, and testimony. Powell was essentially an experimentalist. His pattern of action arose directly from his pragmatic experience, rigorously interpreted in terms of his understanding of the scientific fields in which he specialized. The government surveys with which his scientific career started were not set up to identify land problems or to suggest policy solutions, but their findings compelled a consideration of the policy issues. In this connection Stegner states:

> He understood scientific knowledge to be not only abstract but practical. Its immediate end was policy implemented by legislation, and its ultimate end was the improvement of man's lot and of man himself.[4]

This emphasis in Powell's thinking was evident in his entire career. It was a practical expression of the sociological ideas of his good friend and associate, Lester Ward. It was in sharp contrast to the determinism of Herbert Spencer,

however, and the social Darwinism popular in economic thought at the turn of the century. Powell was himself a doer and had implicit faith in the ability of man to control his fate through the application of intelligence.

This fundamental aspect of his make-up and outlook was a major element in the conflict which marked his career and ultimately almost broke him. By nature, perhaps, he was a fighter, and his activist views with respect to the function of science contributed to a supreme confidence in the rightness of his position. With many of his nineteenth-century contemporaries he sought earnestly for synthesis, and strove to fit the pieces of knowledge together into a coherent, meaningful whole. This undoubtedly contributed to his impatience with those who differed with him, whether scientists or politicians. Certainly it strengthened his own zeal in seeking the goals he set for himself.

Because his findings and the recommendations based on them discredited many existing policies and because a substantial sector of society had or thought they had a stake in these existing policies, it was inevitable that Powell would run into bitter conflicts. As Stegner had said of Powell's land-policy proposals, "Powell was not only challenging political forces who used popular myths for a screen, he was challenging the myths themselves, and they were as rooted as the beliefs of religion."[5]

Vehement and vituperative battles raged between Powell and Congress. As a public servant, he looked to Congress for the funds to carry on his work. Because the members of Congress were peculiarly attached to existing policies and were especially vulnerable to the pressures and objections of those who wanted to see no change, Powell had to become a politician—perhaps the first of a long line of scientific bureaucrats who have had to learn the techniques of the legislative struggle. Powell appears to have been exceptionally able in his relations with Congress, but when the chips were down he lacked the kind of group support which might have made the fight more evenly balanced. To build group support for a position defending the public interest takes time; it is essentially an educational process, and Powell did not have the time. It remained for Pinchot and those around him to carry this phase of the struggle over resource policy nearer to success.

Like many resource scientists after him, Powell found a strong ally in catastrophe, in the fact that existing policies just did not jibe with the requirements of nature. Of particular note were the dread years 1886-1888 when drought and cruel winters shook many of the myths on which settlement of the West had been going forward since the Civil War. Even these grim lessons tended to be forgotten as the weather moved into a wetter and milder phase of its recurrent cycle and as new settlers took up where their predecessors had been broken and beaten. Catastrophic events at least made Congress receptive to Powell's testimony and permitted him to get his position established in the record, so that the seeds thus planted might bring forth fruit at a later date.

When the battle went badly Powell wearied of the struggle and longed for retirement from the irrationalities of the governmental process and the distractions of political maneuver. He envisaged a Platonic world in which the scientist and expert would be insulated from politics and yet would govern. His faith in the rightness of science and in the abilities of man to master his environment through research and management unquestionably led him to

slight many important democratic values. Like many scientists he also failed to appreciate the limited scope of his knowledge and the complexities of the issues with which he dealt. But whatever else can be said against Powell, his brave new world was to be run for the benefit of mankind.

The Conservation Movement

If in the last decades of the nineteenth century a public concern for resource issues became ever more evident, the first decade of the twentieth century saw resource questions achieve a dominance in public policy discussion and debate which has perhaps never been equalled. A number of circumstances contributed to this interest which crystallized in the conservation movement.[6]

THE LEADERS Perhaps most significant was the leadership factor. Never before was so dedicated a group of government scientists in key bureaucratic positions in Washington interested in resource policy. Through friendship and intimate collaboration, the group evidenced a unique unity of outlook. Moreover, they had access to and the support of President Theodore Roosevelt—a President with exceptional ability to dramatize policy issues and interpret policy problems to the public.

It may be argued that the time was ripe, for certainly many factors contributed to the environment which made the conservation movement possible. The seeds planted by Powell and his scientific coworkers were coming to harvest. The social and economic problems of the new century were crying for solution. These and many other influences no doubt were relevant. But the pervasive impact of leadership cannot be overemphasized. Outstanding among the group, of course, was Gifford Pinchot, intimate adviser of Theodore Roosevelt. But the names of McGee, Newlands, Newell, Woodruff, Price, Maxwell, and a number of others should also be noted.

Like Powell, the leaders of the early conservation movement were dominated by a monolithic conception of science and knowledge. Like most men of science, they were torn between the drive to add to knowledge through research and the urge to solve the policy problems which their data seemed to uncover. When pressed, they usually followed the latter course, firm in the belief that they had already mastered the essential knowledge. To a large extent Pinchot and his group sought an engineering approach to resources in order to substitute orderly, planned resource development for the chaotic and inefficient patterns of the past. They stressed multiple use, highest use, efficiency, and development. They were men of science, not economists. Perhaps this is why they did not reflect the dominant economic faith of the early 1900s and never hesitated to propose governmental programs to accomplish their ends of better resource management. To them, as Samuel Hays emphasizes, "the great virtue of efficient planning was that conflicts among resource users could be settled by a scientific calculation of material benefits rather than through political struggle."[7] In a sense they sought a utilitarian solution and hoped to develop a calculus of public interest. Though they stumbled onto the fact of disparate interests among the groups that make up our complex society, the conservation leaders never quite understood the implications of this fact. And as the movement became a moral crusade, allied at many points with liberal programs of

economic reform, the pluralistic character of group support was obscured and a false and superficial unity prevailed.

EARLY STAGES The high point of this initial period in the conservation movement was undoubtedly the Governors Conference of 1908 and the subsequent work of the National Conservation Commission. The mood of these efforts is best symbolized by their stress upon a resources inventory, which it was thought would provide the nation with data of a type used by the prudent business manager. Never again, however, would such a comprehensive view of resource problems be possible; never again would conservation thinking reflect a similar unity of ideas and support. The specialization of knowledge and the specialization of the groups with an interest in resource policy precluded integration and unification of concepts or objectives. The public has learned to use science in order to support particular interests. As a result, scientific data frequently appear as a sophisticated rationalization of the boomer approach to resource development rather than as the solution to conflicts over resource use, which the early conservationists hoped for.

In retrospect, the conservation movement of Theodore Roosevelt was characterized by simple, well-thought-out plans developed by experts for the management of the nation's resources. Decision-making was to be largely the automatic result of the application of science. At the same time, however, a multitude of diverse groups were ultimately to be affected by those plans, and it was in this fact that the seeds of struggle and conflict were to be found. With few exceptions the groups were more interested in the narrow and concrete problems with immediate significance to their range of interest than in the development of comprehensive management plans.

There is much evidence to suggest that, like Powell, the associates of Theodore Roosevelt in the conservation movement were scientists first and democrats second. In consequence, the gospel of efficiency for which they stood prevented a sympathetic understanding of the political struggle which grew up around resource policy, and which in effect destroyed their hopes for integrated plans and policy synthesis. Looking back over the last half century, it is possible now to agree that many of the policy conflicts were essential to encouraging and facilitating a closer approximation of the public interest, and that struggle has played an important part in the formulation of workable resource policies and programs. Certainly conflict, discussion, and debate are indispensable to public education and to keeping government democratic and responsible.

SUMMARY OF CONFLICTS In this connection a summary characterization of the conflicts and struggles over resource policy may serve to complete the discussion of this formative period in the conservation movement. One of the most immediate conflicts was that between individual interests and concepts of public interest and general welfare. Individual interests are, of course, relatively easy to identify, but it is the other part of the equation that creates the difficulty, especially in its refinements. The interests of some clearly lay in the continuance of the haphazard resource policies which Powell, Pinchot, and others sought to alter. It was inevitable, therefore, that strong objections

would be voiced. Power groups seeking hydro sites did not appreciate attempts to weigh the public interest against their own interests. Similarly, western promoters did not welcome irrigation programs based upon land classification, antispeculation controls, acreage limitations, and other trappings of a management approach to water development. Grazing interests, fighting among themselves and with farmers, were none too happy over attempts to limit and control use of the range, and they successfully combined to defeat the introduction of public range management until 1934. And so in every field that the conservation movement touched, resistance developed among those with a stake in existing patterns of handling resources.

A variation of this struggle has been the conflict between local and national interests. In one form, this is the basic problem of the pork barrel, of seeking local development at the expense of the national treasury. In another form, it is the problem of states rights. In its most sophisticated form it is posed in proposals for regional economic development which challenge the easy assumption that what is beneficial to the nation as a whole is necessarily most beneficial to its parts, or alternately that national interest is merely the sum of local interests. Though techniques of regional analysis are still primitive, a persuasive argument can be advanced that meeting certain regional development needs may contribute more to total economic growth than an equivalent effort in solving nationally identified problems. In any case, however, the conflict between the local and the national interest has been typical of the struggle over resource policy.

Another struggle, often the most passionate, has been that among scientists and experts concerned with resource technology, for the unity of expert opinion which early conservationists envisioned has just not materialized. Partly a consequence of specialization and partly a reflection of biases and valuation conflicts, the struggle among experts most frequently is evidenced in the efforts of competing bureaucracies to carry through their particular views of sound policy. Except for half-hearted and generally abortive attempts to provide mechanisms for coordination, the conflicts among technicians remain one of the most complex aspects of current resource policy.

Involved at all points of the struggle is Congress, which provides a sounding board for most groups or interests concerned with resource policy. The battles that Powell had with Congress have been duplicated periodically with respect to one or another phase of resource policy. Noteworthy in the Theodore Roosevelt era was the Ballinger-Pinchot controversy, which even thirty years later provided the subject of heated debate.

Here again a somewhat uniform pattern emerges, for the distracted scientists and technicians seek, as the cure for politics, a delegation of responsibility to themselves so that they can make decisions on the basis of logical analysis and calculation. One example and the results achieved needs to be mentioned. This was the Newlands Act of 1902, which established federal irrigation policy. To avoid the pork-barrel politics which had characterized river and harbor appropriations, Senator Newlands expressly provided that the location of irrigation dam sites be left to the Secretary of the Interior, assuming that the Secretary would act on the basis of impartial analysis. A similar provision was included in Senator Newland's proposal of 1908 for comprehensive river

development. Of course the pressure was there and had to be dealt with. The result was that in 1914 Congress took back the responsibility for controlling the location of irrigation projects.

Much of our resource philosophy had its roots in this period. Many basic resource problems were identified and solutions of far-reaching importance proposed, and from this period many of the myths and symbols with respect to conservation have developed.

THE SEARCH FOR GROUP SUPPORT While the conservation movement initially stressed resource managment and sought development of the nation's resources as its principal goal, these original, simple concepts soon became altered and diffused. These changes were hastened by the bitter political struggle over conservation policy which culminated in the Pinchot-Ballinger dispute. With a less friendly or even hostile chief in President Taft, Pinchot and his intellectual coterie decided to look for political strength to the disparate groups that had interests in particular resource programs and policies.

These groups often had little understanding of the comprehensive objectives which the conservationists sought. The small farmer and rancher had no sympathy for range-control proposals seeming to favor the well-established ranching operation which had its own lands and used public areas on a limited and supplementary basis. To those who embraced the liberal economic programs of the Square Deal, Pinchot's forest management policies were suspect because they favored large timber operators. Conversely, big timber operators and some of the larger grazing interests supported the conservation movement, not because they understood its long-range objectives, but because it related closely to their immediate goals. The promoters of the Chicago-to-Gulf Waterway, as well as those who sought western irrigation, cared little about comprehensive water development and resource management and the closely reasoned plans of experts. Their interest in these developments was usually crassly opportunistic.

Perhaps Pinchot and his group recognized the tenuous basis of the support of groups like these. In any case, having lost access to the points of crucial decision-making, reliance on the support of these specialized groups appeared to be necessary in order to retain some measure of influence. Twenty years earlier, confronted with a similar dilemma, Powell had chosen to remain firm in his faith in the rightness of his position with respect to irrigation land patterns and water distribution policies, only to have the delegates of the International Irrigation Congress, who met in Los Angeles in October 1893, boo and heckle him.[8] Perhaps by 1910 purity of doctrine was no longer possible for the impressive efforts of public education that culminated in the 1908 Governors Conference and the National Conservation Commission had taken the control of the movement out of the hands of the small clique of scientific bureaucrats and had diffused it among many individuals and groups.

Pinchot tried to keep a degree of unity and cohesion among the groups, but his efforts were not marked by great success except in the field of forestry. In forestry, the torch of faith was carried onward only slightly dimmed because in this field Pinchot's own professional influence remained strong. The Forest Service which he built had (and continues to have) a high *esprit de corps*,

and much of its new blood came from forestry schools where the conservation and management philosophy of the Pinchot group was absorbed.

With respect to the general conservation philosophy which Pinchot espoused, however, the search for group support had the inevitable effect of weakening the expression of and hence the loyalty to his original views as new ideas and new concepts were introduced and old ones watered down or revised to become acceptable to supporting groups.

One example is especially noteworthy. Pinchot was never an enthusiastic supporter of wildlife conservation nor of the principles espoused by the wilderness advocates and nature lovers. These interests in the 1890s succeeded in writing into the New York State constitution a prohibition against cutting trees in state forests. So rigid was this restriction that the constitution had to be revised several times to permit construction of highways and ski trails through portions of New York State forests. In 1950, after a storm had downed enough timber to create a serious fire hazard, there was grave doubt as to the legal basis for a program to clear the forests of downed trees to eliminate fire danger. To Pinchot this approach was wrong; he sought management and development of the resources for use, not reservation for esthetic or romantic purposes. His position was further evidenced by his failure to invite the eminent and loved John Muir to the 1908 Governors Conference, and for this oversight or affront (depending upon one's point of view) Pinchot was severely criticized.

But after 1910, wildlife, nature, and wilderness groups, as well as many others, became spokesmen for the conservation movement, with the result that it changed from a more or less pointed effort to establish resource management to something of a crusade, and the term conservation took on complex and multiple meanings. All efforts to restore specificity to the concept have proved (and will continue to prove) futile, for the vague connotations of the term, the inconsistencies in its applications, and its emotional and moral content merely reflect the diversity of group support and interest.

Conservation Concepts

Associated with the general concept of conservation are a substantial number of subsidiary concepts which are used so frequently and are associated with natural resource policies and programs so often that they have become verbal weapons for the political struggle. It is worthwhile to examine several of them, for although a random sample, these key concepts do suggest some of the major ideas associated with the present conservation movement and with the struggle for resource programs and policies.

WISE USE Perhaps one of the most frequent catch phrases that has been associated with conservation and resource policy is that of wise use. In writings and speeches on conservation, this phrase will be among the most frequent to occur. But what does the term mean? Would anyone admit that he stood for unwise use of resources, or that a course of action he was following or proposing was not wise?

The real questions are, of course: What is wise resource use? Wise from

whose point of view? How is wisdom determined? In fact, reflection suggests that until one's premises and assumptions are made explicit, the concept of wise use is meaningless.

Closely related to the concept of wise use is that of efficient use. Perhaps the term efficiency has more precision, since even in ordinary parlance it suggests a balance, either physical or economic, between input and output. Thus an efficient forest operation would seem to be one in which for a given amount of effort in the management and harvesting of a timber area the maximum amount of timber products would result. In growth terms, this is the sustained yield concept, namely, that annual growth should equal annual harvest. In dollar terms, this suggests that cost (expenditures) should not exceed benefits (net income). But efficiency too has its limitations.

One of these limitations concerns the question of time. Especially in the private sector of the economy, the annual basis for measuring profits and losses (cost and benefits, in-puts and out-puts) is most common, and only to a limited degree have accounting techniques been adapted to the growth cycle of a white pine forest (fifty to one hundred years). Few companies dare to speculate on twenty-five-year or fifty-year projections of market conditions. Even in public programs, the time factor is usually narrowly defined. For example, engineering studies indicate that Norris Dam will have a useful life expectancy of 600 to 800 years, yet payment schedules established by Congress require reimbursement of investment costs in forty years.

Or take another aspect of the time factor in relation to efficient use. The Alabama Agricultural Experiment Station has published findings which suggest that in some upland cotton areas the farm operators would receive a greater return per acre if they raised trees instead of cotton. But how would a farmer, convinced of the soundness of this conclusion, convert his acres from cotton to trees, when cotton is an annual crop while twenty-five to fifty years are required to raise a producing forest, even in Alabama? How will he live while waiting for his forest to come to the producing stage? What is efficient use under these circumstances?

A related aspect of the problem may be suggested by contrasting efficient use of a particular farm operated by a childless couple with no heirs and use of the same farm operated by a farmer with five children. The former may justifiably manage his farm so that its sale value when he reaches sixty years of age will net him a maximum amount to permit him to live out his years in reasonable comfort. The later may concentrate on a management plan that will deplete the soil but yield large cash income immediately so that he might send his children to college in the faith that his children will look after him in his declining years. What is wise use under these alternatives?

An East Tennessee farmer, whose gross annual income never exceeds $1500, with debts and an ailing wife needing medical care, is offered $500 for a twenty-acre stand of timber which will be mowed down by an enterprising sawmill operator leaving the land to gully and erode. Even assuming that he is aware of the consequences and knows that selective cutting will, over a twenty-five-year period, net him much more actual cash, what will be wise use in this situation? Will the answer be any different if the $500 is used for an automobile, a television set, or a host of unnecessary, nonutilitarian but psychologically satisfying trinkets?

Perhaps in the last instance the answer seems easy. But consider the wilderness area preserved in its pristine state so that some few thousand citizens (those with the money to afford western vacations) can commune with nature and recreate their flagging spirits. Should wilderness areas based upon psychological satisfaction be preserved in the face of uses that would add substantially to the nation's food supply, electric power production, or oil reserves? What is wise use?

Often the concept of wise use is applied solely in a physical context. In speaking of using land in accordance with its capabilities, the soil conservationist thinks in terms of farming practices which will minimize erosion losses and soil depletion. Decisions of this character in the final analysis must be made in an economic context. Just as coal mining depletes the coal, so any pattern of cropping for market depletes the soil. The question thus is one of degree, the wisdom of a particular decision being determined by a number of related factors, including costs. Every farmer and every society may at one time or another have to decide on the rate of depletion, on whether to risk long-term benefits for short-term returns. In short, although esthetic values, personal preferences, and judgments as to consequences are all relevant, economic cost considerations are an indispensible element of wise use.

Several different kinds of costs may, of course, be involved, and costs may be variously distributed. Costs to the economy as a whole, as well as costs to the owner of a particular resource are important, for often a basic policy conflict involves the attempts of some group to shift costs to someone else. This is typical of most flood-control controversies. Costs may also be shifted from the present to some future time. Wasteful use of a resource now may increase costs of the same resource in the future. The concept of waste is itself an economic concept and the extent of waste is largely measured by means of accounting techniques and marketplace price considerations.

This point is illustrated by the dilemma Pinchot found himself in on the issue of tariff on lumber products. He argued that a high price for lumber would permit better physical utilization of the timber crop. This same concern also led him to favor large corporate timber operators. In present-day debates, a similar argument is utilized to defend farm price supports, namely, that with higher prices the farmer can take conservation objectives into more effective consideration. Just incidentally this argument would have to be balanced against the degree to which fixed prices keep marginal producers and marginal lands in crops. It can be argued that lower cotton prices would discourage some of the upland farmers, result in a decrease in cotton row crops, and make a shift to hay and pasture more attractive.

BALANCE OF NATURE Closely related to the concept of wise use is that of balance of nature. This is a term especially favored by the ecologists who have given it considerable intellectual content. Their view suggests the interrelatedness and interdependence of all life and often stresses the maladjustments that may follow the destruction of a particular species of life. They are concerned not only with first causes but with chain reactions, with ultimate consequences. Overgrazing of mountain ranges results in worthless cheat taking over, with permanent destruction of grazing. Burning a pine forest brings aspens and birches and a complete biotic as well as economic readjustment.

Destruction of beaver habitat, and dams has subtle effects upon local water tables and water flow. These and many similar and more complex relationships are parts of nature's balance.

Unquestionably, too, ecology as a scientific discipline has much to contribute to resource policy decisions. Unfortunately in its more popular forms the idea of balance of nature is presented in a sentimental fashion which assumes an idyllic state of nature typical of a time before man intervened to upset the balance. This view is akin to that of eighteenth-century utopian philosophers who urged a return to nature as a means of solving political and social problems.

Somehow big fishes have always eaten little fishes, and bears fatten on big fishes. Conflict and catastrophe are as typical of nature without man as of nature with man. Floods, erosion, dust storms, forest fires, overgrazing, and similar upheavels occurred prior to man's invasion of the North American continent, though admittedly man's use and abuse of his environment may speed up resource deterioration and depletion. There is some reason to believe, however, that man has also slowed up natural deterioration and has even improved upon nature.

In any case, man himself is a part of nature, and when measured by the time clock of geology, man's overgrazing of range lands is really not much different from the overgrazing which undoubtedly occurred when buffalo herds grew too large, for nature's control operated in the same way in either case—the range gave out when its carrying capacity was exceeded. It is not the natural cost of overgrazing that is serious, it is the social cost.

An implication of the balance-of-nature thesis that is particularly disturbing to the social scientist is that sound resource use should be measured against the primeval conditions of 1492. To accomplish this objective would require the abandonment of our civilization and a return to a hunting and fishing society with a population of a few million. In this view man is the despoiler of nature, and resources and their preservation become ends in themselves. To the social scientist resources are a means—a function of time, space, and culture. Balance, if the term is to be used at all, represents the application of intelligence to current resource problems in the context of particular social conditions and objectives. Even social scientists may yearn for a utopian world in which social decisions are determined automatically or in accordance with simple rules and formulas. The weight of social analysis suggests, however, that life is more complex and that judgment and will must be exercised in the world of real life and real problems. It is in this belief that the processes of politics provide important means for making important decisions.

EXHAUSTIBLE, INEXHAUSTIBLE, AND RENEWABLE RESOURCES Although used frequently as a criterion of desirable resource policy, the distinction between exhaustible, inexhaustible, and renewable resources suffers from oversimplification. The approach suggested by these terms was stressed in the Conservation Conference of 1908, which in turn initiated the resource inventory of the National Conservation Commission. Essentially this inventory sought to list resources in terms of the quantities available as determined by geologic and similar surveys and estimates, still a common basis for analyzing resource problems.

But physical availability is only a part of the picture, for long before a resource is exhausted, it may cease being used or useful because costs are too high. This is well illustrated in the case of lumber, for the greatest volume of timber was utilized in the United States in 1907 despite the fact that population in the United States has doubled since then and the economy has expanded even more. The point is that as the relative price of lumber increased, other materials were used instead. The quantity of minerals in the earth remains constant; it is their cost of recovery that varies. The mineral resources of the oceans, for instance, are tremendous, and magnesium is recovered from this source, but before it is necessary to turn to sea water for iron ore, other metals such as aluminum or titanium will be substituted for iron, because these will prove cheaper.

From a practical point of view, moreover, these concepts pose difficulties, which to a large extent are variants of the time and cost problems already discussed. It would seem sound to use inexhaustible or more plentiful resources instead of exhaustible or less plentiful ones. But what if the inexhaustible resources cost more to use? Cost more to whom? Over what period of time? The dilemma is posed by imagining a timber operator, dedicated to sustained-yield management but born before his time when the virgin forests of Michigan, Wisconsin, and Minnesota (now called the Great Lakes cut-over area) were being ravaged by clear-cutting practices. He would have been unable to practice the principles to which he was dedicated and still remain in business. Moreover, in the social and political environment of the 1880s, he would have been unable to secure support for public action to restrain what was going on. He would probably not even have been able to amass convincing evidence that his views were sound, for this is only clearly evident in hindsight. So it would have been his views against those of the dominant group of forest operators and the public at large.

An Interpretation

In this chapter, several influences, trends, and ideas associated with resource policy have been touched upon. Some suggestion as to the nature of political issues and conflicts in this policy area has been given. No attempt to be comprehensive or exhaustive has been made, but rather the objective has been to indicate some of the developments that brought resource issues to public attention and to suggest some of the factors that have been involved in the political struggle over resource policy.

In terms of the political process, this bit of history suggests that struggle, in which groups and combinations of groups have played important roles, has provided a means for clarifying issues and goals, adjusting interests, and educating the public. This review has also suggested something of the importance of science and scientific management in this area of policy and has indicated that the political process provides an essential mechanism by which science and technology can be effectively related to the values, goals, and desires of a complex society which stresses individual judgment and choice. Perhaps the political process comes close to balancing the many and complex forces that clamor for attention and to assuring reasonable and responsible decisions.

In terms of natural resource policy, this chapter not only emphasizes the

importance of knowledge based upon research, but also the importance of public education on policy issues. Without strong, dedicated technical leadership, resource policy would have been inadequate; but without extensive public understanding, leadership would have failed completely. This chapter reiterates, too, the limitations of knowledge, and it implies the need for humility with respect to what is known as against the great area of unknown.

Finally, this review of conservation history suggests the importance and the dangers of glib slogans. They are useful and necessary in the political struggle and in the educational process but, like all clichés, seldom come to grips with the real issues. Ideas are weapons in the political struggle, but the student must learn to appraise them with the most rigorous techniques available, for only thus can the forces involved and the issues at stake be comprehended. A dedication to the continual search for knowledge and for better public policies based on knowledge is essential.

CHAPTER THREE

Resources and the Future

Importance of Prediction

Resource policy has always been concerned with the future. To assure a supply of food, fiber, and materials in decades and centuries to come has been a fundamental objective of most recent resource programs. Even when these programs have stressed better management, greater efficiency in resource utilization, and fuller resource development, a concern for future benefits, needs, and supply has also been expressed.

In economic terms, this aspect of resource policy deals with the difficult question of allocating resources between the present and the future. Although allocation of resources among present competing uses may be an important governmental concern, this more complex policy area involving allocation between present and future needs is peculiarly in the domain of governmental decision and poses acute problems of determining the public interest.

The nature of this long-range problem in the materials field was vividly expressed by the President's Materials Policy Commission, which stated: "It is not enough to solve the [materials] problem 'eventually;' while the Nation waits it can encounter such a succession of individual shortages as to disrupt the cost pattern and defeat an 'eventual' solution altogether." Solutions, the Commission stressed, could "never be achieved at random: only a consistent policy toward materials can hope to bring them [solutions] about." Policy was defined by the Commission as meaning "intelligently directed action toward consciously determined goals—as distinct from aimless drift and blind faith."[1]

Policy decisions for the future can, of course, be made very deliberately with an acute realization of long-range consequences, or they may be the accretion of small day-to-day improvisations at many points in the governmental structure. They may be made thoughtfully in terms of a careful analysis of available data, or on the basis of hunch and intuition. Whatever the basis for policy decisions, it is clear that in the absence of the gift of prophecy decisions for the future must be based upon predictions about the future.

Prediction is thus a key problem of resource policy. It poses acute questions of methodology and technique. It also provides a major focus for political struggle, since policy decisions based on predictions not only determine what happens to physical resources but also affect the interests of many individuals, groups, and communities. Decisions for the future will surely advantage some and disadvantage others, and this is the heart of resource politics.

This chapter, therefore, examines some of the difficulties of prediction, especially of the methods and techniques involved. Actually, the problem of prediction is that of planning, of marshaling the facts that bear upon a particular subject so that the best decision can be made. This concept of planning was outlined in Chapter One. Here a more specialized aspect of the planning process is being examined. Again the earlier warning should be reiterated: planning is a rational, systematic technique; it should not be confused with certitude; it does not produce right answers, but merely reduces the margin of error and increases the probabilities for success.

When public policies run into trouble it is easy to assume that the planner and the technician, had they been consulted, would have known the correct answers and avoided or anticipated all the difficulties. While planning will undoubtedly contribute to better decisions and cut down the chances of mistake, the planner and the techniques he uses are not infallible. It is important to recognize the limitations inherent in any methodology seeking to penetrate the fog of the future. Predictions, even when based upon rational calculation, must integrate facts with judgments and assumptions as to how people, groups, and nations will act and react. No matter how detailed the data, no matter how efficient the electronic brain, the interpretive role of the planner cannot be eliminated.

In many cases the number of assumptions that must be made in order to predict can be substantial, and changes in only a few may completely upset the predicted results. When predicting future resource situations, for example, use patterns, production costs, resource availability, and similar factors must be assumed. In addition, human motivations, desires, goals, and values can be of crucial importance, though often unpredictable and rarely subject to statistical determination. Moreover, many unanticipated developments are likely to occur which can only be taken into account through some device comparable to the contingency reserve concept of business accounting.

Planning—decisions for the future—must be done, and it must be of the highest quality commensurate with the importance of particular decisions. Equally important, however, is a recognition of the limitations of the methodologies employed, in order to encourage a constant reappraisal and to recognize the value and contribution which the political struggle represents. The political process offers a flexible alternative to a rigid system dominated by experts.

Cases of Prediction Difficulties

In 1893 a well-educated and well-informed man, an attorney, speaking to a group of serious-minded fellow citizens in Madison, Wisconsin, sought to predict the pattern of highway development which the nation might anticipate. With every town and city interconnected by railroad, this gentleman foresaw roads and highways radiating from rail centers for several miles like spokes from the hub of a wheel. He rejected as unlikely and unnecessary an extensive system of interconnected roads. In 1893 Henry Ford made his first successful horseless carriage!

ARIZONA GROUND WATER For some years in Arizona and several other southwestern states, irrigation agriculture has been pumping ground water

at a rate far exceeding estimated rates of replenishment. The consequences of continuing this course are several. Most obvious is the fact that when the water gives out communities now dependent on irrigation will become ghost towns like those deserted mining and lumber towns scattered about the country. If this occurs, the economic and social costs to the region will be considerable.

Conceivably, however, mining of water might be justified in the same way that mining of iron ore is justified. To urge a slower rate of pumping, or no pumping at all, is to recommend a lesser rate of economic development now, presumably so that development may continue for a longer period on something equivalent to sustained yield. In urging this conservative course, certain assumptions are implied, particularly that a market for the irrigated crops will continue in the future. This certainly is a possibility. It may even be a probability, but it is not a certainty. A few technological developments, presently within the realm of possibility, could change the entire picture. Fresh water from the sea at reasonable prices could make pumping ground water obsolete and concern for depletion of certain aquafers irrelevant. Synthetic or laboratory-produced foods (yeasts, for example) could alter the entire pattern of agricultural production. Atomic war could make the presence or absence of ground water in Arizona of small consequence to the few who may survive.

PETROLEUM RESERVES Since 1900 the view has been frequentlly expressed that our national oil reserves would soon be exhausted. Yet crude oil production in the United States has increased over thirty times from 1900 to 1950, while world production multiplied even more. At the same time, estimates of reserves also increased. These facts have been responsible for a feeling of security and a general lack of public interest in the oil-supply problem. The gloomy prognosticators must be ill informed.

What then are the facts? Responsible geologists have been making estimates of American petroleum reserves at least since 1908, when D. T. Day estimated reserves as ranging between eight and twenty-two billion barrels. As of December 31, 1950, the American Petroleum Institute estimated American reserves at twenty-nine billion barrels, despite consumption of forty billion barrels from 1908 to 1950.

The key to these apparent contradictions lies in the fact that American geologists have generally based their predictions on so-called proved reserves as determined by actual drilling, coring, and related tests. They have relied upon precise interpretation of specific data relative to the capacity of known fields under existing methods of recovery. Their conclusions have not been based upon assumptions with respect to new technology, nor upon generalized interpretations of surface geology. The discovery of a new field like that of the Williston Basin in 1952 may add a substantial quantity of petroleum to the estimates of proved reserves. But prior to actual drilling, the data would not have reflected this potential even though many geologists expected to find oil in the region. How long will the discovery of new fields continue? When will the potential petroleum production of the entire United States be known? What will be the impact of improved drilling, recovery, and production technology? On these questions petroleum geologists will generally not commit themselves, although admitting that the supply will ultimately give out.

SYNTHETIC FUELS The policy dilemma of predicting the future of petroleum resources is highlighted by our experience with respect to research and development in liquid synthetic fuels.

After World War II the U.S. Department of the Interior secured authorization from Congress for an extensive program of synthetic-fuels research, including pilot-plant operations of substantial scope. At Rifle, Colorado, a laboratory and pilot plant were established for research in the technology of making petroleum products from oil shale, while in southern Illinois a plant to manufacture products from coal was set up. A part of the justification for this program was the national interest in developing the science and technology of synthetics in order to be prepared for the day when natural petroleum would no longer be available.

The oil industry itself has opposed this program. Although there is evidence that opposition was in part based upon power factors within the industry itself, and in part on a fear of government competition, it is also clear that the industry position reflected a judgment that the natural supply of petroleum was still sufficiently plentiful so as to obviate research development of the type envisaged in the government program.

The Materials Policy Commission Report

In 1952 the President's Materials Policy Commission analyzed the raw materials base of our industrial economy, and predicted where that economy might be in 1975 and the problems which could be anticipated in reaching the indicated goals. It reviewed the situation material by material, and on the basis of consumption estimates sought to predict the character of the American economy twenty-five years hence. Both in terms of technique and content, the Report of the Commission is of tremendous significance, for it represents the most thorough attempt so far to project the materials need of the economy twenty-five years into the future.

Other government commissions and agencies have sought to peer into the future, but none has utilized such rigorous methods, nor dealt so forthrightly with many of the pitfalls of projection. For this reason the work of the Commission provides an excellent basis for examining some of the difficulties of predicting the future, and illustrates the problems involved in policy planning in the materials field.

First, the Commission's own reservations should be noted, for they indicate an acute awareness of the difficulties. Thus the Commission stated:

> The projections . . . are not to be viewed as predictions. They depend upon a number of explicit assumptions which, though now considered most reasonable, may not hold in the future. These assumptions are, briefly, that *productivity and population will grow at specified rates, that international tension will continue, that a third world war will be prevented, and that high employment and economic prosperity will prevail in the free countries.* Account is taken only of those technological developments whose applications are clearly foreseeable at the present time.
>
> A final assumption is that the *raw materials will be freely available at*

> *approximately the prices prevailing during 1950,* abstracting from inflation or deflation in the general price level.[2] [Italics added.]

THE TIME FACTOR From many perspectives, twenty-five years seems a very long time. Looking back at the tremendous number of technological changes which have occurred in the past quarter century, one is impressed by the temerity of the Commission in seeking to predict what the next quarter century may bring. But in terms of the history of a nation, twenty-five years is but an hour. It is in the context of a longer time perspective, moreover, that the more optimistic aspects of the report become worrisome, for they are overshadowed by the facts of tremendous resource consumption since the turn of the century.

"The nature of the problem," the Commission stated, "can perhaps be successfully oversimplified by saying that the consumption of almost all materials is expanding at compound rates and is thus pressing harder against resources which, whatever else they may be doing, are not similarly expanding."[3] The Commission estimated that "by 1975 the United States requirements for all materials will be from 50 to 60 per cent higher than in 1950, [and] requirements for all minerals (except gold) will be 90 per cent higher."[4]

What this means in quantitative terms is indicateed by the dollar comparison of consumption (in constant 1935-39 dollars) given by the Commission: total value of materials consumed in 1900, $3,309,200,000; in 1950, $9,495,500,000; in 1975 (predicted) $15,600,000,000.[5] The magnitude of our materials consumption can perhaps be further emphasized by figures indicating the cumulative consumption of certain key materials between 1900 and 1950: 26,000,000,000 tons of coal; 40,000,000,000 barrels of petroleum; 3,000,000,000 tons of iron ore; 22,000,000 tons of lead; 26,000,000 tons of zinc; 33,000,000 tons of copper.[6]

The problem of resources for the future would seem to be more pressing than the Commission's own warnings suggest. Later portions of the report were, in fact, on the optimistic side, especially when discussing prospects for improved technology. It is perhaps symbolic of this attitude that the largest volume of the five-volume report deals with "The Promise of Technology."

In many respects, however, the commission was bold in even looking ahead twenty-five years. But the failure of the Commission to explore some of the longer-term problems may represent a dangerous myopia, intensified by a strong faith in technology and an implicit belief that everything will work itself out.

GROWTH TRENDS IN THE AMERICAN ECONOMY The Commission stated that "it is reasonable to anticipate a rate of growth for the United States economy in the future roughly equal to the past rate of growth, or about 3 per cent a year."[7] It was estimated that the gross national product for 1975 would be $550,000,000,000 as against $273,000,000,000 in 1950. The 1975 population was assumed conservatively at 193,000,000.

The assumptions which the Commission made with respect to the continued growth and expansion of our economy are reasonable and proper. Most Americans would insist on believing as much. Yet analytically, it must be

recognized that while this continued growth is highly probable, it is not inevitable. Economies have deteriorated, as did our own economy in the period 1929 to 1936. Moreover, if war comes the entire structure of the Commission's projections would collapse, as the Commission itself recognized.

The Commission was forced to make hundreds of assumptions, of which this one concerning the growth of the economy is among the more significant. But it is well to recall that the mathematics of projection can only imperfectly, if at all, take into account the vagaries of human choice and the impact of forces not included in the structure of the calculations. Some of these difficulties with projections are illustrated by the predictions of United States population made during the 1930s which indicated an absolute population decline by 1975. The statistical techniques were sound; it was the premises underlying the projections that were in error, and as a result events have not coincided with the predictions.

RESOURCE COMBINATION From a materials point of view, as the Commission fully recognized, projections are difficult because of the problem of "the mix," that is, the complex and changing combination of resources. It would be a simple matter if growth in population and growth in the economy merely meant a proportionate increase in consumption of the materials which go into the economy. But this is not what happens. For example, the peak year for harvesting timber was 1907. Consumption of petroleum products has increased more rapidly than either the economy or the population. The same is true of aluminum, electric power, and many other components of the economy. Yet who knows, or how can one predict, the character of these changes? Two examples suggest the difficulties: one is atomic energy, the other is titanium.

In its discussion of "The Outlook For Energy Resources" the Commission stated:

> At this time, it does not appear that nuclear fission can be regarded as a contribution in any substantial degree to electric generation during at least the next 10 or 15 years, and the probability is that the atomic energy industry will remain a heavy net consumer of electricity.[8]

This would seem to be a logical, conservative judgment. Yet it is not a certainty, and if the probabilities referred to are changed by atomic developments, the Commission's entire structure of assumptions with respect to energy will be altered.

The prospects for titanium are suggested by several quotations from the Commission Report:

> Titanium possesses an unusual combination of desirable characteristics: light weight, strength, toughness, and high resistance to corrosion, particularly in marine atmosphere. It is about 42 per cent lighter than stainless steel but is nearly as strong as steel. . . . As compared to aluminum, titanium is significantly stronger for its weight, is much harder, and less susceptible to corrosion. . . .[9]

How, in projecting the economy even twenty-five years ahead, can the contribution of a potential resource like titanium be taken into account? Titanium

is today at a stage of development comparable to aluminum fifty years ago when electrolytic processes were first being tried. The impact of aluminum could not then have been foreseen with any degree of accuracy, and similarly the impact of titanium cannot be predicted today.

CONSUMPTION PATTERNS Another aspect of the President's Materials Policy Commission Report which is unique among analyses of resource policy problems is the way in which predictions are built upon consumption estimates and related cost-price assumptions.

A dominant theme of many resources studies, especially in the mineral field, has been a concern for total reserves—the quantity of oil or coal or iron, in the ground. This approach the Commission rejected, emphasizing instead the impact of growing supply shortages on costs and prices, and the resultant readjustment in resource use.

A classic example of how depletion leads to higher costs and changes in resource use, the Commission suggested, is the case of forest products. If remedial steps are not taken now to bring saw timber replacement into balance with annual harvest, lumber will not at some future date be suddenly unavailable and forests denuded. What is more likely is that the price of lumber will gradually rise to such a point that its use will be severely limited, and other materials will gradually be substituted for it. Insofar as this situation results from a failure to take preventive steps now (it takes from fifty to eighty years to grow a tree suitable for saw timber), and insofar as this failure contributes to future increased construction costs, the economy will needlessly suffer. The degree of damage will be determined by the extent and impact of the cost rise.

This emphasis on consumption patterns and cost-price relationships is perhaps more useful for policy decision than earlier resource inventories, for few resources are indispensable and hence the significant issues are those of relative costs. In this context, intelligent policy should be directed to anticipating high costs, since increasing costs may mean a decline in real standards of living, despite apparent dollar expansion in the Gross National Product.

Having based its projections on statistically determined patterns of end-use, the Commission did not attempt to appraise or evaluate end-uses in terms of necessity, indispensibility, and the moral and ethical concepts of society. Admittedly, this is a trackless wilderness into which the planner or policy-maker ventures at great risk, for it involves asking questions about waste, real costs and real values, hidden costs, short-term as against long-term benefits, public interest as against self-gratification, conspicuous consumption, visions of the good life, keeping up with the Joneses, advertising, salesmanship, and a host of other aspects of our culture. Yet these factors vitally affect consumption patterns. Moreover, changes in some of these factors might be easier to accomplish than changes in the physical supply of particular resources. It could, therefore, be highly inaccurate to talk about the components of the American economy of 1975 without also being concerned about the propriety of those components and of their distribution and use. A society might find itself producing $550,000,000,000 worth of geegaws, but failing to produce the essential gimcracks. Or it might produce the proper balance of geegaws and gimcracks but fail to get them to the people who need them or want them. Or still another possibility might be that $440,000,000,000 of gimcracks

would provide a satisfactory and even equivalent way of life at a given time and leave more for other nations and the future.

An oversimplified example may illustrate this point. A substantial part of the drain on timber resources arises from the demand for pulpwood to make paper. It does not require a statistician to show that the American economy is lavish, if not wasteful, in its use of paper, especially when compared with the economies of all other nations. Consider the extensive use of wrapping paper, the tremendous size of newspapers, and the terrific volume of comic books and pulp magazines. Consider also the failure to reuse much of our waste paper. Substantial reductions in this type of paper consumption could be effected without any real decline in the American standard of living.

Perhaps a part of the trouble is that the dollar yardstick by which the materials future is measured is several inches short. What, for example, should be done with the statement of the Materials Policy Commission that ". . . if all the nations of the world should achieve the same standard of living as our own, the resulting world need for materials would increase to six times the present already massive consumption"?[10]

The United States with but 9.5 per cent of the world's population and 8 per cent of the world's land area currently consumes a major and growing portion of the world's materials, estimated in 1950 at about half the production of the free world.[11] Do we want all nations and all people of the world to achieve our standard (if they wish it, of course)? And if we do, is not the fundamental policy question how we can accomplish this goal? Can the world remain half slave and half free? Can we continue to live in luxury while almost 90 per cent of the world's population lives in extreme poverty?

NATIONAL SECURITY A major preoccupation of the Materials Policy Commission was with national security, with the cold war, and with the materials economy of the free world. Recognizing clearly that the American economy could not, except at terrific cost, be self-sufficient in 1952, the even greater dependence on materials resources outside America in 1975 is self-evident. Yet confronted with the cold war, the Commission was forced to choose between friends and enemies in calculating the available supplies of particular minerals and other material resources. Here again the uncertain foundation for the assumptions is apparent, for today's friend may be tomorrow's enemy.

It is significant that the previous quotation relative to the world standard of living and the sixfold rise in materials consumption is followed by this sentence: "On the other hand, if today's cold war should erupt into a hot war tomorrow, the pattern of materials demand, and the adequacy of our supplies, would alter in much swifter and more drastic ways."[12]

The Commission saw in America's needs to import resources an opportunity for capital investment in underdeveloped countries and assumed that the resources of the free world were there for American use and enjoyment. But the Commission did not face up to the question of how to develop foreign economies for the benefit of their own peoples. Truly, foreign policy is the touchstone of all policy; it represents a synthesis of all policy issues, and our continued survival will be determined by how well we deal with foreign-policy questions, and only incidentally with how comfortable our civilization was before the end came.

FREE ENTERPRISE The report expresses a strong bias in favor of a private enterprise economy. But this term is not specifically defined. The conviction of the Commission is stated in the following language:

> . . . we believe in private enterprise as the most efficacious way of performing industrial tasks in the United States. With this belief, a belief in the spur of the profit motive and what is called 'the price system' obviously goes hand in hand. This method, motive and system have served uniquely well in America. . . . We believe in a minimum of interference with these patterns of private enterprise. But to believe in a minimum of interference is not to believe that this minimum must be set at zero. Private enterprise itself has from time to time asked for helps, or restraints, or counterpoises from Government to keep the system working at its best; for this reason, among others, we have experienced for a long time a mixture of private and public influences on the functioning of our economy. The Commission sees no reason either to blink this fact or to decry it; as we see the future, the co-existence of great private and public strength is not only desirable but essential to our preservation.[13]

But the Commission was less than forthright in failing to apply this generalization more specifically and in failing to recognize the problem of monopoly and the issues of public interest that have been important elements of resource policy for fifty years. Moreover, since security and defense considerations weigh so heavily in the Commission's recommendations, these issues of public economic interest cannot be slighted. As every war since and including the Civil War has shown, under war conditions private enterprise and the rules it has formulated do not protect the public interest. Reliance upon the price system has not in wartime assured realization of essential public objectives. Since the impact of the cold war upon the materials economy is greater than that of every war except World War II, the question whether the price system can be relied upon to the extent the Commission implied needs careful consideration.

This stress on the price system is particularly disturbing with respect to many of the mineral industries which have been notorious in their reliance upon administered prices rather than upon competitively determined prices reflecting supply and demand. The economic history of the past fifty years abounds with antitrust and Federal Trade Commission actions and reports criticizing the steel, sulphur, aluminum, potash, phosphate, nitrate, copper, and many other industries on this score.

The Commission thus avoided some significant policy questions: At what point is the exercise of governmental authority required to meet anticipated needs of 1975? To what extent is government subsidy, or investment, or production necessary to meet goals which the Commission set? The range of techniques available for dealing with particular problems is broad, and American organizational ingenuity has by no means been exhausted. Hence it is unfortunate that the Commission dismissed this aspect of the problem in sterile terms of business versus government, for this misses the real issue of long-term policy planning.

THE ROLE OF GOVERNMENT In one portion of its report the Commission catalogued six major roles of the federal government as including the functions

of: conditioner of the economic environment; regulator of private industry; guardian of foreign relations and national security; owner and custodian of resources; supplier of services to private industry; buyer and user of materials.[1a] These six types of governmental activity represent a comprehensive catalogue of governmental functions in relation to the materials economy. But the really difficult question is when and under what circumstances shall particular techniques be utilized. Here the report is vague. Yet this is a fundamental issue of resource policy, of planning to anticipate problems which rational analysis and logical appraisal suggest require action, either public or private.

To explore the reasons why the Commission avoided these issues would be interesting in itself. But at this point the extent to which this omission colors the predictions of the Commission is the focus of attention. It is impossible to anticipate future economic conditions without taking into account trends in governmental activity and without determining the nature and scope of governmental action which may be required to reach calculated goals. To illustrate this point, reference need merely be made to the tremendous part played by government in the development of atomic energy. No one could hope to claim that atomic progress to date would be anywhere near where it is, if governmental action had not been in the picture.

Hence, in predicting the situation in 1975, it seems unreal to assume no governmental action, or even merely a constant or indeterminate amount of governmental action. Long-range resources planning must come to grips with this question. This the Commission itself recognized in its definition of policy as "intelligently directed action." Yet in hedging on the role of government in attaining the projected 1975 goals, the report is deficient.

Perhaps this illustrates the limitations that stem from the values and biases of the planner or the planning agency. Perhaps it merely underlines the temper of the times in which the Commission worked. Certainly it suggests that planning for the future will always have difficulty in rising above the present.

AN APPRAISAL OF THE REPORT The problems with which the President's Materials Policy Commission dealt are of crucial importance to America. Despite the critical comments above, the work of the Commission should be recognized as a milestone in the analysis and review of resources policies. As the Commission itself pointed out, policy questions in this area are not resolved by periodic spot-surveys, but require constant and continuing study and thought.

At this point the student of natural resources, as well as the student of political processes, must be concerned with an important organizational problem, for it is clear that the federal government is not now constituted to deal effectively with these crucial resource issues. This is in contrast to the situation in agriculture, where a strong federal department has been studying and investigating many aspects of farm policy for almost a hundred years, and land-grant colleges in forty-eight states have been similarly engaged. No comparable pattern exists in the field of materials. The U.S. Department of the Interior administers numerous public programs related to the mineral industries, and some states have departments of geology. Extensive technological research has been undertaken, and numerous and thorough geological surveys have been completed. But only a small amount of attention has been devoted

to the crucial policy issues touched on in this chapter. Little attempt has been made, on a continuing and comprehensive basis, to appraise and analyze the problems and progress in the materials segment of the economy as it relates to broad considerations of public interest.

Perhaps what is needed is a Resources Research Act combining the goals and objectives of the Agricultural Experiment Station Acts, the Agricultural Research and Marketing Act of 1946, and certain parts of the Atomic Energy Act, so that research not only in materials technology but also in materials economics and policy can be carried on at both federal and state levels, giving due consideration to the human and moral values implicit in the title of the Materials Policy Commission report, *Resources for Freedom*.

Planning and the Political Struggle

In an essay on "Over-legislation" Herbert Spencer wrote:

> When I remember how many of my private schemes have miscarried—how speculations have failed, agents proved dishonest, marriage been a disappointment—I am struck with the utter incompetence of my intellect to prescribe for society. . . .[15]

Others, like Spencer, seeing the difficulties in planning for the future, throw up their hands with an exclamation of helplessness. The cardinal error of this attitude is its assumption that if complete knowledge is not attainable, then none is worthwhile. Science and knowledge advance not by certitude, but by working approximations, by pushing the frontiers of ignorance back a bit here and a bit there.

The crudity of his instruments did not deter Gallileo from studying the heavens. Nor did Leeuwenhock cease his investigations to await the development of electronic microscopes. It is a mistake to judge proposed courses of action by the standard of perfection. The choice is among realizable alternatives. Intelligently directed action, even when the probabilities of error are great, is preferable to aimless drift or sheer chance.

Since resource policy must by its very nature deal with the long-range future, prediction is essential to policy formulation. And prediction can never be without error. It is just not possible to draw detailed pictures of the future, but perhaps one can trace the probable outlines of things to come as a reasonable guide to policy-making. To this our society would seem to be committed.

Prediction or planning in this sense is no substitute for politics. It is rather an integral part of the political process—albeit that part which best symbolizes a logical and thoughtful appraisal of relevant facts as a major component of decision. To the extent that predictions involve real or imagined interests of groups participating in the political process, a struggle for access to and control over those who plan and predict will be normal. This, too, the student of politics must recognize, for no matter how much "objective" planning may be desired, the fact will always be that this phase of governmental decision-making is also involved in the political struggle. As much of this chapter has indicated, it is often not the facts, but the premises on which the facts rest that can and will be subject to challenge. And this lies at the heart of the politics of prediction.

CHAPTER FOUR

Intergovernmental Relations and the Political Struggle

In the politics of natural resources, administration is not neutral but rather a vital factor in policy formulation and a normal arena for political struggle. It is impossible, therefore, to distinguish between policy and administration, to ignore the role of the bureaucracy in shaping the substance of governmental programs.

Public administration in the field of natural resources provides many illustrations of the intimate relationship of organization and management to program and policy. Disputes over organizational forms have not only involved questions of utility but also important issues of program direction and scope. Conflicts over budget format, over personnel standards and job descriptions, and over most of the so-called housekeeping functions have not infrequently reflected group efforts to gain access to and control of points in the hierarchy where crucial decisions are made. The most routine administrative action has often had a determining impact upon the course of policy.

Space does not permit a comprehensive and detailed analysis of the interaction of administration and policy in the resource field. The discussion of planning in previous chapters illustrated the extent to which this key segment of administration can be involved in the struggle over policy. Similarly, the examination of the scientific basis for resource programs and of the leadership role of scientific bureaucrats suggested some of these crucial interrelationships.

In this present chapter, attention is directed to the critical area of intergovernmental relations[1] where the political struggle has involved different levels and units of government. In this area a major conflict has been, and will continue to be, that of adjusting federal and state responsibilities. This problem cannot be understood in simple structural or organizational terms, but must be considered in the context of fundamental policy issues. Another area of dispute, often mistakenly interpreted as merely a power struggle, is that among different governmental agencies for control over particular programs. Attempts to resolve these conflicts have often reflected basic policy differences and represented efforts to gain advantage for one position in the guise of administrative coordination.

Federal-State Relationships

The conservation movement began as a federal rather than as a state activity. In part, this was because early programs in this field focused upon problems

concerning the use and disposal of the federally owned public domain. The movement's Leadership came largely from a group of scientists working for the national government and having intimate access to national political leaders. Moreover, in so far as conservation involved financial support, the federal treasury was always more accessible. More recently, the increasing economic importance of federal programs, especially those that developed under depression and war conditions, has also contributed to the dominance of the national government in resource activities.

Yet this dominance has not been entirely welcome, and it has not gone unchallenged. The history of federal resource programs abounds with instances of conflict and debate over the proper role of the national government. This was, for instance, a major issue surrounding Powell's expansion of geologic mapping and surveying activities in the 1880s. It was at the root of some of the opposition to Theodore Roosevelt's conservation plans. More recently, the question of federal-state relations has been deeply involved in river-basin development proposals, and is a vital part of the current controversy over how soil conservation programs should be administered.

THE ROLE OF THE STATES State governments have generally been unable or unwilling to deal extensively and effectively with resource problems. An example is the situation with respect to stream pollution. Under the common law and by statute in most states, the person who pollutes a stream is liable for damages and may be restrained from continuing the pollution or forced to install pollution-control devices. Constitutional authority for state action to clean up the rivers is adequate, for under the police power necessary statutory controls could be enacted, if they are not yet in existence. Yet with minor exceptions (Wisconsin being an outstanding example) the states have not been able or willing to deal effectively with the pollution problem. Finally, after many years of inaction at the state level, public health technicians and conservationists in desperation turned to federal legislation and used the threat of federal administrative action as a goad to the states.

Since World War II the literature on the programs and activities of particular states in the field of natural resources has been enriched by a number of monographic studies.[2] From these it is evident that the role of state government has in certain instances been significant. State forest and park developments are especially noteworthy, and state fish and wildlife programs, developed in response to the interests of resort keepers, hunters, and fishermen, are also impressive.

Historically, even prior to the Revolutionary War, colonial legislatures had enacted laws to control tree cutting and to protect game. Throughout the nineteenth century state legislatures from time to time passed statutes related to the conservation and development of particular resources. But extensive state activity in this field came only after the conservation movement got underway in the administration of Theodore Roosevelt, and most of it followed the 1908 Governors Conference. Even so, states have been slow to move, and today, with few exceptions, state resource programs are limited in scope and restricted in effect.

After a review of the resource activities in eleven western states, Vincent Ostrom was forced to conclude:

> . . . . no state is carrying on a well coordinated multiple-purpose program of resource administration. It is questionable whether the states have either a competent legislative or administrative arrangement to be able to define or to accomplish the public interest for effective control and utilization of all natural resources. . . .
>
> If the Western States are to assume a greater role in the conservation and development of natural resources, they must first put their own house in order. . . . Otherwise the states are apt to become anachronisms, like counties, to be tolerated as they muddle through.[3]

This is a serious indictment; it applies not only to western states but virtually to all states with only slightly varying degrees of validity. No matter how deeply committed one may be to the philosophy of states' rights and local administrative autonomy, it must be admitted that the record of state performance in the resource field is not impressive. The weakness of the states is not organic, but political and administrative. It is largely a question of moral determination, but there is slight evidence of a desire on the part of the states to set their houses in order.

With few exceptions state salary levels are considerably below those paid by the federal government or by private industry. Low-quality personnel is thus virtually inevitable, although there have been and are some outstanding exceptions. Despite a spate of "little Hoover Commissions," state administrative management is not impressive, and program and policy research is virtually nonexistent. State planning programs, instituted in the 1930s, have all but collapsed or become preoccupied with business and industrial promotion. The stark inadequacy of state administration with respect to substantive programs, the ineffectiveness of state coordinative devices, and the lack of state executive leadership, all open the door to lobbies and pressure groups and raise doubts as to how well the public interest is attended to.

While federal budget practice is far from perfect, there has been a constant effort for over thirty years to improve it, and more recently the stress on performance budgeting has sought to make the budget process a means for more effective review of program decisions. No similar trend is apparent in the budget administration of most states, and state activities are rarely, if ever, based upon economic policy considerations.

These limitations of the states are distressing, but not necessarily fatal. They must be seriously considered for the reason that the utilization of the states to accomplish certain goals in the resource field is so often suggested as an alternative to federal action. Hence the question of state competence must be faced in realistic terms, and not merely in idealized generalities of Jeffersonian democracy. To point out the weaknesses of the states, moreover, is not to suggest that they could not be utilized more effectively, nor that their functions should not be strengthened and expanded, nor that their activities must all be turned over to the federal government. Honest and realistic analysis, based upon a clear identification of the job that needs to be done, is the first step to progress. Unquestionably, the simple federal-versus-state argument obscures the fundamental question of what tasks can best be performed at the several levels of our governmental system, and stands in the way of effective remedial action.

FEDERAL INTERESTS AND FEDERAL DICTATION Much of the state-versus-federal argument overlooks also the crucial question of substantive federal interests and often implies that the federal government is dictatorial and not subject to proper democratic controls.

First, on the issue of the national interest, a review of the circumstances under which the federal government was created in 1789 may be instructive. A national government with responsibility to act in the public interest where problems crossed state lines was established because the states were unable to agree among themselves how to handle such problems. It was later recognized that the national interest was often not identical with the sum of the interests of the several states; the Civil War established the preeminence of the national interest. Hence, when the national government acts it seeks the general welfare and the common good even though in conflict with state or local interests. This is a principle implicit in our federal system.

Second, on the issue of democratic control of the national government, it can be stated categorically that in many cases, and in the minds of many citizens, the federal Congress and the federal Executive are more *representative*, more *responsive*, and more *responsible* than either local or state governments. The absence of issues in state and local elections, the dominance of personality factors, the low level of public interest and understanding of local and state government, the fact of limited, biennial legislative sessions (in most states), and the distressingly low quality of state and local officials and employees—all of these raise questions of the competence and democratic character of government at these levels compared to the national government.

The Interstate Compact and Resource Development

Much discussion of governmental organization and management in the field of resource conservation and development has hidden the fact that organizational and management issues often serve as cover for important economic and political power struggles. Particularly acute analysis is often required to penetrate the organizational and management aspects of these situations in order to deal with the substantive policy issues and to determine where the public interest may really lie.

The ultimate test would seem to be how a particular administrative arrangement or management technique actually works, how it affects the realization and protection of the public interest. Granted that the public interest is not easily defined or determined, yet responsible administration and responsive politics demand attention to this problem, for it is not likely that the public interest lies in drift and default. The problem is compounded in the field of federal-state relations because of the tendency to use idealized shibboleths as the tests of proper administrative relationships and structure, rather than pragmatic tests of workability and performance.

This would seem to be a part of the difficulty with respect to the suggestions that interstate compacts be used more extensively in handling resource problems that cross state lines. Unquestionably, the interstate compact can be a useful device for dealing with certain very important resource problems. But it is equally unquestionable that the interstate compact, with or without

federal participation, cannot supplant the federal government in resource administration, program planning and coordination, or policy determination. Yet this device is urged especially as a means for dealing with problems of river-basin development, and often appears as an alternative to the creation of a federal regional commission or regional agency analogous to TVA.

LIMITATIONS OF THE INTERSTATE COMPACT The interstate compact has not been used extensively to deal with general resource problems. It has been used in situations where legal rights were subject to determination by negotiation, and where, upon the conclusion of negotiations, the rights and duties of the parties were largely settled. Only in a limited number of instances have interstate compacts dealt with continuing policy and administrative problems. And in these cases where administration has been involved, policies were established so that the administrative acts required a minimum of initiative and discretion. In the language of administrative law, the acts were ministerial in nature and did not call for planning or policy judgments of a complex or far-reaching character.

This conclusion is supported by Frederick L. Zimmermann and Mitchell Wendell in their comprehensive survey, *The Interstate Compact since 1925*, where they state:

> But, although use of the interstate compact as a vehicle for integration of administration by states in a region has been expanded since the 1920's, instances of such use are still limited in number and narrow in scope. . . . To date, application of the compact in the regional, as in the boundary field, has been particularistic. Compacts have been drawn to deal with facets of a problem rather than with the whole problem, and even then the range of powers granted to regional agencies has been limited. . . .[4]

These authors seem incidentally to minimize this judgment in their own advocacy of the compact approach to river-basin development.

With the possible exception of the Port of New York Authority, the agencies created by interstate compact have not been administrative or action agencies, but primarily mechanisms for exchange of information and correlation of action among the signatories. The powers granted have been minimal, rarely exceeding those residing in existing state agencies under existing state programs and policies. Coordination at this level is better than no coordination, but it represents largely the addition of similar or even disparate elements with little or no attention to real synthesis, to elimination of inconsistencies, or to creative leadership.

The failings of the compact approach in this respect are identical to the weakness of coordinating committees, such as the Federal Interagency River Basin Committee or its regional counterparts. The product of such efforts are never greater than the imagination of the least of the participants, never broader than the legal powers of each member, and usually only so significant as the lowest common denominator.

It cannot be emphasized too strongly that though agreement is a desirable goal of coordination, a realistic analysis of coordination processes reveals that effective administration often requires decisions against the interests of some and favorable to the interests of others. While unnecessary contentiousness

and conflict should be minimized, the governmental process in a democracy is properly characterized by conflict, by struggle for favorable decisions. And the process of administrative decision requires choices among interests. Hence, arrangements which only deal with areas of agreement, which ignore conflicts and refuse to face up to consequences, are not adequate to the tasks of resource administration.

It should be noted, too, that behind the debate over the suitability of the interstate-compact device as a technique of administration are important issues of resource policy. This is suggested by a look at the groups that are urging the compact device as an alternative to stronger federal administrative action with respect to river-basin development. It is perhaps not mere chance that among these groups are those who favor private electric companies, for federal river basin programs imply an expansion of federal public power.

Nor is it surprising to find governmental agencies presently active in phases of river development supporting the interstate compact device as a substitute for effective federal regional coordination. To the Corps of Army Engineers (and perhaps to the Bureau of Reclamation and the U.S. Department of Agriculture, among others) support of the interstate compact proposal represents a convenient tactic to delay more drastic approaches to river-basin coordination. The very fact that establishment of a compact in the Missouri Basin, for instance, will take many years, permits existing agencies to continue their present programs without interference, while appearing to support a constructive proposal. Even after a compact is in force, the work of most agencies would probably not be materially altered. Hence, support of the compact idea for basin development is sound bureaucratic strategy, although the cost to the nation may be staggering.

THE PORT OF NEW YORK AUTHORITY The Port of New York Authority has often been cited as an example of effective administration under an interstate compact. One crucial test would seem to be that of public accountability and control. It is at this point that the record of the Port of New York Authority is least impressive. Although it is a regional agency, it is not controlled by the region in which it operates or accountable to it. Ultimate political control lies in Albany and in Trenton, neither of which are within the region, and both of which are more often than not politically hostile to the New York City metropolitan area.

It may be argued rather convincingly that the federal government in Washington, is more responsive to the interests of the New York metropolitan area than either Albany or Trenton. The citizens of the New York metropolitan area have more control over the Congressmen and Senators they send to Washington than over the legislators they send to the New York and New Jersey capitols. Machine control of politics is less effective with respect to federal offices, as measured, for instance, by the selection of candidates for federal offices, than in the case of state officials. Finally, the form of control which rests in the governors of the two states and in the state legislatures is cumbersome, and less effective than the control which Congress exercises over any of the agencies in the executive branch.

The Port of New York Authority is not accountable to the public except in the narrow sense of fiscal honesty, comparable to that required of a bank or

public utility. In fact, the Port of New York Authority is perhaps more closely analogous to a private corporation operating on a bistate basis, such as a privately owned and operated public utility, than to a public agency. It can even be argued that the privately owned public utilities in the New York City region are under more rigid public scrutiny and control than the Port of New York Authority. No public utility, for instance, would be permitted, on its own initiative, to take profits resulting from excess charges against electric power users and apply them to the development of its cooking gas business. Yet this is exactly what the Port of New York Authority has been doing with its tunnel and bridge profits, for these profits have been subsidizing airport operations. Moreover, it was only the threat of legislative investigation that resulted in a reduction of bridge and tunnel tolls. This is hardly a pattern of responsible administration, for in fact neither the public nor their political representatives were asked whether subsidization of airport development was desirable. It might be argued, too, that the widest public interest was slighted in the decision to locate Idlewild Airport on Long Island, when perhaps a site a comparable distance to the southwest of New York City might also have provided service to all of New Jersey and to Philadelphia, with equally good if not better transportation to Manhattan via the railroads and transit lines already servicing the area.

The Port of New York Authority is peculiarly a service type agency, with no compulsive powers and with narrow and specialized responsibilities. One of the results of this is that it can not deal with broader economic and social consequences of its particular activities. In this respect, it is much like a private corporation engaged in resource development. It has neither the responsibility nor the competence for considering broad issues of public policy. Like a private corporation, too, it is limited by its charter, and does not have the mechanisms for redirecting or reshaping public policy. Although many government agencies suffer under similar inhibitions, the chief executive and his staff agencies are able to reappraise policy implications of agency programs, and the annual appropriation review in Congress provides an important occasion for re-examination of agency operations. Nothing comparable is present in the operating pattern of the Port of New York Authority, which raises its funds by direct bond issue and is limited only by ordinary standards of financial feasibility with respect to its projects.

The Port of New York Authority is, nevertheless, a sound device for accomplishing certain public objectives, but it deserves much more critical analysis than it has received if it is to be used as a model for regional resource development.

THE INTERSTATE COMMISSION ON THE DELAWARE RIVER An illustration of the difficulties encountered when interstate collaboration goes beyond the simple execution of policies clearly established by prior agreement is the experience of INCODEL, the Interstate Commission on the Delaware River. This agency has been in existence for about twenty years, but has not taken any substantial action to control or develop the waters of the Delaware River. In fact, Pennsylvania has challenged the plans proposed by the Commission, and it is predicted that the end result will be a typical lowest-common-denominator sort of development; that is, the program which may be carried forward

will be only that to which no one state can take exception. In this process the public interest is often lost sight of. For example, according to the Federal Power Commission, the INCODEL plan will develop only 65,000 kilowatts of power out of a potential of 1,000,000 kilowatts in the basin.

THE MISSOURI BASIN SURVEY COMMISSION Perhaps one of the most thorough examinations of the use of the interstate-compact device for resource development was made by the Missouri Basin Survey Commission[5] during 1952. This Commission, be it noted, was not made up of federal bureaucrats, nor dominated by federal agencies. It was composed of persons from the Missouri Basin, many of them dedicated to strengthening state and local government in the region. Yet the majority rejected the compact device as not meeting the needs of the situation.

Because the Commission's position was so well stated, several quotations seem warranted. The Commission said:

> . . . any basin agency would need certain basic powers including rather extensive direction and supervision over Federal resources agencies. . . . This would mean . . . that State officers serving on the Compact Commission would exercise administrative supervision over agencies and officers appointed by and responsible to the Federal Government.
>
> The basin's resource problems must be considered not only in terms of the local and regional interest but also in terms of the national interest. . . .
>
> We are of the opinion that the Federal-State Compact Commission goes too far in the direction of elevating localized interest over those of the basin and the Nation. . . . We believe that resource development involves issues outside the normal scope of State activity and, in some areas, deals with problems which the States have never been able to solve. . . .
>
> The difficulties in negotiating a compact indicate that it is not a flexible device capable of meeting changing needs and conditions. Renegotiation of an established compact would be at least as difficult and time-consuming as its original negotiation. If a compact is negotiated the Missouri Basin States may well find themselves involved in a very real "superstate" that they can neither alter nor control.[6]

In this connection, the comments made earlier with respect to the motives of those espousing the compact device should be recalled. While undoubtedly many who support this approach do so from sincere and justifiable fears of federal centralization and from a commendable desire to strengthen state and local government, there is a strong inference that some of the more vocal and active support stems from the deliberate desire to prevent a solution.

Perhaps a test of sincerity would be to stop all developmental activities in the basin until a satisfactory administrative device could be established. There would seem to be good reason to support such a proposal in the Missouri Basin when it is remembered that the Survey Commission, the first Hoover Commission, the President's Water Resources Policy Commission, several committees of Congress, and any number of citizen groups have all severely criticized the existing pattern of development in the basin. So long as no drastic changes occur, those with a vested interest in the existing pattern stand to gain, and discussion of an interstate compact is one of the best ways

to prevent or delay substantive corrective action. This is the real political struggle over organization for Missouri Basin resource development. It is duplicated, of course, in every major river basin in the nation.

Interagency Coordinating Committee

One other device of some importance to the problem of federal-state relations in resource development should be examined. This is the device of the interagency coordinating committee. In the past twenty years a number of coordinating committees have been established to bring together more or less frequently both federal and state personnel dealing with resource problems. Varying degrees of formality characterize these committees, some being *ad hoc* bodies, other starting out that way and over a period of time becoming more and more formalized. Some include in their membership a wide range of interests and agencies; others have been limited in scope and membership. Some have approached a legal status, while others remain entirely voluntary in character.

In an age of hyperspecialization and at a time when the interdependence of all elements in our society is patent, devices like coordinating committees are essential. Techniques that encourage exchange of ideas and provide opportunity to understand other viewpoints are commendable. But the limitations of the techniques must be clearly recognized. For example, there is a logical inconsistency between the idea of consensus in a coordinating committee and the idea of specialization. Is it reasonable, for instance, to expect the person dedicated (by training, indoctrination, and experience) to the preservation of wilderness areas, valuing them highly, and convinced of their importance to the American way of life, to be sympathetic to the viewpoint of the person trained in building dams, storing water, and generating power? In many cases, moreover, it is no answer to say that a compromise should be worked out to provide a little wilderness and a little water control. Or again, consider a man whose life has been devoted to the study of salmon and the development of salmon fisheries, who believes that the food problems of the future will at least in part be solved through more effective use of our fish resources: can one expect that man to "understand" the engineer who urges big dams for power, flood control, irrigation, and navigation when they will destroy the salmon industry? There is no compromise of the immediate issue, and to try to broaden the view or educate the participants may result in the very deterioration of the specialization which makes them so valuable to society in the first place.

Still another example, illustrated so well in the case of water allocation. Where claimants for water have demands for more water than is available, allocation among them on the basis of some formula may be less than sound, for none may get enough to operate economically or successfully. This has been partially corrected in the priority of uses written to many state laws, yet as between states simple bargaining has generally been the basis for determining rights.

These examples suggested the limitations of coordinative techniques based upon committees of equals, seeking by negotiation, discussion, and bargaining to work out conflicts and disagreements. Certainly, in many instances these con-

flicts arise from lack of information and misunderstanding, which can be cleared up by discussion. Often, too, compromises can be effected which do substantially achieve the ends of several interests which initially appeared irreconcilable. In these situations a committee can frequently be very helpful, depending always on the flexibility of the participants.

But even after full and effective coordination on this basis has been achieved, there remain substantial policy questions of goals and objectives. If there is not enough water in the Missouri Basin for both navigation and irrigation development, how should the water be utilized? If there is a water need in Los Angeles, do the undeveloped rights of Arizona take precedence over those of this highly urbanized community with its tremendous importance for the economy of the West and of the entire nation? Does North Carolina have a right to the electric power generated by the water which falls on North Carolina mountains? Should Minneapolis, which is not in the Missouri Basin, get the lion's share of the Missouri River hydropower? These and similar policy questions cannot be settled by vote of a committee. Although committee discussion may clarify the issues, such discussion could also serve to obscure them. Attempts to settle questions of goals and objectives by committee procedure will almost surely obliterate lines of responsibility and weaken concepts of public accountability.

Competing Bureaucracies and Resource Policy

The fact of bureaucratic competition in the field of natural resources has been well documented in recent years. Several task-force reports of both Hoover Commissions dealt with aspects of these conflicts, and a substantial number of monographs and articles have laid bare the struggle among the bureaucrats. In the field of water development, *Muddy Waters* by Arthur Maass[7] is a landmark, and in the field of agricultural conservation, Charles Hardin's *The Politics of Agriculture*[8] suggests the pervasive and far-reaching character of the conflict.

Despite these studies, however, the public tends to dismiss the bureaucratic struggle as reflecting the greed and power-hungry machinations of professional bureaucrats. In fact, of course, the naked power aspects of these conflicts between agencies are more readily understood than the complex ramifications which often underlie the situation. It is to the interest of one side or another, moreover, to paint the opposition as unprincipled and selfish builders of bureaucratic empires in disregard of the real public interest. To be sure, crass motives of this sort may sometimes be involved, but in most cases bureaucratic competition is part of a larger and more complex process of government in which struggle for access to and control of centers of decision-making is characteristic. Hence, to understand the nature of the struggle one must seek to untangle what David Truman has called the "web of relationships" that are involved in most governmental situations.

At the risk of oversimplification, a few of the better-known conflicts between competing bureaucracies in the resource field will be cited and commented upon. For a more thorough review of these problem areas of resource organization, the reader is referred to the monographic literature.

FOREST SERVCE VS. BUREAU OF LAND MANAGEMENT An important conflict, which expands and declines in intensity, is that between the Forest Service in the U.S. Department of Agriculture and the Bureau of Land Management in the U.S. Department of the Interior. Both agencies administer extensive federally owned forest lands. Hence, the charge of duplication, which is so dear to the hostile politician, is superficially sustainable. The situation is complicated by reason of the fact that forest units managed by the two agencies are in some regions intermingled, like the squares of a checker board.

More basic to the disagreements between the agencies, perhaps, are the differing concepts with respect to cutting practices and relationships with lumbering interests. Policies on grazing and on charges (fees) are also at variance. Often these aspects of the dispute have been phrased to reveal a mutual distrust of professional competence and economic objectives. These attitudes, in turn, are intensified and colored by the clientele relationships of the two agencies, and have a more or less direct bearing upon political support, especially at crucial appropriations times.

Historically, this conflict traces back to the turn of the century when Gifford Pinchot was able to relieve the former Land Office of its management responsibilities for that portion of the public domain which had been withdrawn from entry (by presidential executive order) and established as national forest preserves. This organizational conflict between Interior and Agriculture contributed to the Ballinger-Pinchot controversy which bedeviled President Taft and permanently colored the growth and development of the conservation movement from that date on. More recently, Secretary of Interior Ickes urged President Roosevelt to transfer the Forest Service to the Interior Department, and the first Hoover Commission proposed the consolidation of the forestry functions, but hedged on whether the new consolidated agency should remain in Agriculture or be established in Interior.

THE ARMY ENGINEERS Considerable public attention has been directed to the conflict over the role of the Corps of Army Engineers in the construction of river control works. Opponents of the Corps have included the Bureau of Reclamation, the U.S. Department of Agriculture, various units of the Executive Office of the President, the Hoover Commission, and other agencies in lesser degrees, as well as several committees of Congress.

The problems associated with this question are beyond the scope of this Study. But several comments with respect to the situation may suggest the complex nature of the struggles which are fought on the battlefield of organization but which have their roots in fundamental concepts, cleavages, alliances, and alignments in our society. The goal of the struggle, in the first instance, is articulated in organizational terms, but fundamentally it reflects the attempts to influence and achieve access to the points of policy and program decision.

This important point has often been lost sight of by those who would solve the problem of the Corps of Army Engineers solely by organizational means. Several years ago, for instance, President Truman proposed that the Corps be transferred to the U.S. Department of the Interior and consolidated with the Bureau of Reclamation. This was in accordance with recommendations of one of the Hoover Commission task forces, but not of the Commission

itself. In any case, this reorganization proposal failed to get Congressional approval and has not been urged again since the change in administration in 1953.

Organizational consolidation can certainly result in the avoidance of some competition and duplication between the Corps of Army Engineers and the Bureau of Reclamation. But organization alone will not eliminate the factors that make the Corps what it is. It will not eliminate the pork-barrel influences for which the Corps is notorious.

For over one hundred years the Corps of Army Engineers has been engaged in various types of public-works construction, financed by the annual Rivers and Harbors Appropriation Bill. It is noteworthy that decisions with respect to public-works construction by the Army Engineers have rarely been made on the basis of general economic calculation. Or, in positive terms, decisions with respect to public-works construction by the Corps of Army Engineers have always been based on the kind of factors that in the field of public employment are labeled political patronage. It took the assassination of a President to arouse the public to demand a merit system for federal employment; it almost seems that something equally catastrophic may be necessary to alter the basis of public-works decisions from that of pork-barrel politics and political horse-trading to something approaching merit and concepts of fiscal and economic responsibility.

The governmental agency, like the private corporation, has no conscience and is able to act in ways that individuals responsible for their actions would find totally reprehensible. The atomization of decision-making responsibility, the deliberate limitation by statute and administrative order of factors considered relevant, the exclusion of broader implications of decision, the cultivation of a separation between job responsibility and personal morality, and the stimulation of organizational loyalties (even by means of the threat of punishment for insubordination)—all of these are techniques common to large-scale organization, both public and private.

The problem is essentially moral and not organizational, although admittedly organizational devices can help or hinder an effective solution. But before regarding the organizational solution as sufficient, one should recall that the President of the United States himself has at times been unable to control the activities of the Corps of Engineers—neither as President and Chief Executive with presumed power over the management of the federal budget, nor as Commander in Chief with nominal authority over the principle officials of the Corps.

SOIL CONSERVATION SERVICE VS. AGRICULTURAL EXTENSION Another well-publicized instance of bureaucratic battling is the fight involving the Soil Conservation Service and the Agricultural Extension Service of the Department of Agriculture. Also involved in the controversy have been some of the other agricultural agencies, but the SCS–Extension fight points up the issues reasonably well. A few comments will suggest some of the complex roots and rationalizations of the organizational struggle in this field of government.

In some respects the struggle among agricultural agencies is different from most comparable disputes in that its basis is widely recognized to be in conflicts

among farm interests and pressure groups allied and aligned in various combinations and seeking to dominate the decision-making process in major phases of agriculture. On the side of the Extension Service are the farm bureaus and their affiliated organizations; on the side of the SCS is the powerful National Association of Soil Conservation Districts together with a number of other conservation pressure groups, all enjoying some support from the Grange, and vehement encouragement from the Farmers Union.

The public seems, generally, to understand that in most states the agricultural extension services are allied with state farm bureaus, or are subject to varying degrees of farm-bureau influence or domination. In many quarters, moreover, this affinity is accepted as a normal concommitant of the fact that in many states the farm bureau is the largest and strongest farm organization, with long-standing clientele relationships between the county agents and the county farm bureaus. The leadership group in both farm bureau and the Extension Service comes from similar environments and has had similar training. Similarity in social and economic outlook might be expected, and collaboration toward common objectives is thus well established.

While the role of the farm bureaus and their relations to the agricultural extension services are quite generally understood, the group support of the Soil Conservation Service is less well known. One of its strengths, however, lies in the impregnable and unassailable character of the conservation concept. Being for conservation is like being for motherhood and against sin. In the public mind, a direct connection exists between the Soil Conservation Service and conservation in general, and hence any criticism of SCS is often portrayed as an attack on the basic resources of the nation instigated by those who would exploit and despoil our heritage and leave our posterity to starve.

Another advantage of the Soil Conservation Service lobby is the simplicity of its position. "Save the Soil" is a better slogan than that of building better farm units as a means of preserving the family farm. The emphasis on the whole farm enterprise, including family living, and economic, sociological, and cultural aspects, and agronomy and soil management, is somehow not so readily understood by the nonfarm citizen.

The ideological aspects of the conflict between the groups supporting SCS and those supporting the Extension Service involves not only the emotionally charged concept of conservation, exploited by the protagonists of the SCS, but also includes equally loaded ideas of agrarian democracy, which are in turn exploited by the groups supporting the Extension Service. The county agent is presented as being "of the people, by the people, and for the people," in contrast to the SCS technicians who are portrayed as the minions and puppets of a centralized, dictatorial federal government remote and unsympathetic to the needs and wishes of the people. For almost a hundred years land-grant colleges have been the guardians of the agrarian point of view, which provides effective argument for the advocates of the extension services in the struggle with SCS, an argument partly weakened, however, by the fact that the soil-conservation districts are also local units of government. But this fact is combatted by charging that the districts are dominated by the federal bureaucracy and hence are not effective grass roots organizations.

Both agencies and their supporters have an abiding faith in the rightness of their respective positions, and unquestionably this complicates the relation-

ship and makes compromise difficult. Hence, it is a gross oversimplification to cast the fight between the Soil Conservation Service and the Agricultural Extension Service solely in terms of pressure-group politics, although participants in the conflict frequently consider it to their advantage to do just this. The student of the political struggle must penetrate these oversimplifications, and seek to understand motivations and causes of conflicts and to appraise and analyse the strategy and tactics of the struggle, recognizing the emotional content and myth complex of particular arguments. It is a mistake to assume a lack of sincerity or a Machiavellian intent on the part of those engaged in presenting a particular point of view. The governmental process deals with values, judgments, opinions and beliefs as influenced by or expressed in the views and actions of particular individuals. There can never be complete agreement nor full consensus; if there were, we might at that point justly become concerned over the continuance of the democratic way of life.

Of growing importance in the conflict between SCS and the Extension Service (and typical of organizational struggles) is the competition for funds. In any one appropriation year there can never be enough money available to undertake all of the activities that have merit. This is the first axiom of public administration; the second is that where two agencies are operating superficially similar programs, invidious comparisons are likely to be made and embarrassing questions asked. For some years, annual federal appropriations for the SCS have equalled or exceeded those for the Agricultural Extension Service. As a result, the conflict between the two agencies has regularly been discussed at appropriations hearings largely in terms of competition.

Again quite typically a part of the conflict takes the form of a lack of confidence in the competence, methods, and program objectives of the other agency. Initially, the SCS was highly critical of the alleged failures of the Extension Service with respect to the soil conservation job. The Extension Service, on the other hand, questioned the often narrow approach of the SCS technicians and frowned upon the criticisms of an educational approach to farm problems often implied in SCS statements. These differences were crystallized in terms of the efforts to define the job of Extension as educational and that of the SCS as service, and in terms of the differing concepts of farm planning held by the two agencies.

Of considerable importance, too, has been the stress by SCS on a national program carried out under more or less uniform policies in every state. Extension has, in contrast, urged state control of program emphasis and direction. This issue, incidentally, brought TVA into conflict with SCS, TVA lining up with Extension on the basis of its announced policies of strengthening state and local agencies.[9]

Conclusion

Many other intergovernmental conflicts might be discussed to illustrate the extent to which policy and program issues are often settled in organizational terms. In many cases, the conflicts do not make headlines, but nevertheless are an important aspect of the day-to-day processes by which governmental decisions are made. The pluralistic character of decision-making is a basic premise of this study. By this is meant that public-policy decisions occur at

many different points in the governmental structure and in many different guises. While grand policy decisions may often be made by design and deliberation, a substantial amount of important policy is established indirectly and even inadvertantly on the basis of small decisions which in accumulation determine the course of action or preclude alternatives. It is in this context that conflicts over intergovernmental relations become particularly significant, and the student of resource policy must include these and other administrative problems within his ken, if he would understand the political struggle over resource policy.

CHAPTER FIVE

The Search for the Public Interest

Thirty years ago public programs dealing with natural resources were particularistic and generally uncoordinated. They stressed research, education, reservation, protection and a minimum of regulation, but except for the efforts of Pinchot and his group in the early days of the conservation movement, little attempt was made at synthesis, or at establishing basic integrative policy goals.

The research of this period was primarily functionally oriented and of limited scope. The education concentrated on the more superficial aspects of conservation or dealt with particular problems like forest-fire control. Reservation was regarded as the means of preserving the last segments of the public domain from depradation and for possible future use. Some additions to forest preserves were made by both federal and state governments, but the core of the reserved areas remained those portions of the public domain set aside by Theodore Roosevelt in the first decade of this century. Protection was extended particularly to fish and game, and regulation dealt with only the more glaring abuses.

These were the chief elements of the state and federal conservation activities until the 1930s. Many resource areas, such as minerals, were hardly dealt with, and there was little effort made at formulating comprehensive resource policies.

These more traditional approaches to resource problems are still important and make up a substantial part of present-day governmental resource activities. To a large extent, however, they are accepted as proper public activities and have moved from the arena of heated conflict and debate. But occasionally the scope of some of these activities, especially as reflected in appropriations, is in issue. In western grazing and lumbering states federal control of the public domain is involved in a bitter political struggle.

Conflict over Development

But the subject of intense current conflict is in the area of resource development. In simple terms, the question is to what extent the federal government should use its powers and finances directly to encourage development of particular resources, or, in the case of river-basin programs, of particular regions.

Those who urge the need for positive governmental intervention for resource

development accept the idea that government can be a potent factor in determining the nature of the economy and in assuring particular levels and patterns of economic activity. With some force it is argued that the role of government is now so tremendous that it cannot, even if it chose, ignore the policy implications of its activities, and hence basic questions of public interest must be dealt with.

That questions like these should even be considered is due to several factors: first, the depression of the 1930s; second, the materials requirements of war and defense; and third, the concomitant change in public attitudes with respect to the role of government in maintaining an active economy and in directing its course along chosen lines.

ORIGINS OF THE PROBLEM Both the depression and the war emphasized the organic character of the economy and starkly revealed the limitations of traditional atomistic views which relegated government to a minor role. Economic interdependence has long been a truism of text writers, yet it took the depression and war to make the American public politically aware of this fact.

In World War II the public became cognizant of materials shortages due to resource deficiencies rather than to temporary production or distribution difficulties, and of the corollary fact that an industrial economy is impossible without a plentiful low-cost supply of natural resources. In the years since 1930 the close relationship between patterns of resource use, degrees of resource development, and the general health of the economy have come to be accepted. Actual experience in dealing with problems of depression, war, and defense established a general awareness of the significance of public programs, and more importantly of their potential for directing and influencing the course of economic events. As a consequence, an increasing need for positive (or at least deliberate) governmental action with respect to resource development was identified. Stated in another way, it became apparent that traditional conservation programs and agencies no longer represented the entire area of public interest in resources, for virtually every government program might have an effect upon the resource economy.

Several examples illustrate these interrelationships. Since postal rates on printed matter bear a relationship to their bulk, it is conceivable that a sufficient increase in postal rates might bring about a reduction in the size of certain publications, with a corresponding saving in scarce wood pulp. Tariffs, tax policies, and interest rates can also have far-reaching effects upon resource use. The depletion allowance granted oil and mining companies is an obvious example, which in the view of some economists encourages overdevelopment of mineral reserves. It can be argued, to cite another example, that the ready market and high prices for cotton resulting (in part) from government price-support operations negates much of the effort at soil conservation in the so-called "upland" cotton sections, where erosion is a major land-use problem and conversion from row to cover crops a desirable objective.

Problems posed by interrelationships such as these represent an important influence in broadening the base of political concern over resource questions. It was inevitable that as government activities expanded in scope and extent the impact of particular programs on the economy generally would be assessed and resulting inconsistencies and difficulties identified. Even those hostile to

the growth of government contributed to the atmosphere in which a study of economic effects of public programs could go forward. What happened, in fact, was that all government programs began to be appraised in terms of economic consequences as perhaps only the tariff question had been analyzed in the preceding experience of the nation.

All of these factors, thus briefly catalogued, contributed to a major shift in public attitudes with respect to the proper and potential relation of government to the operating economy, and added a new perspective to the public interest in resource questions.

THE POLITICAL ECONOMY OF NATURAL RESOURCES It has been suggested in earlier chapters that a major function of the economic system is the allocation of resources among alternative uses. So long as the direct concern of government with resource allocation was that of landlord (that is, as owner of the public domain), its decisions could be made and analyzed on a basis similar to that of other resource owners. Whether governmental management was good or bad, whether public resource enterprises made or lost money, was not of great moment. Nor was a limited enterpreneurial role of government inconsistent with its regulatory and police functions. None of these posed major problems so long as the economy was conceived as essentially automatic in its behavior.

"The basic assumption of automaticity," Professor John Kenneth Galbraith has stated in a recent book, "is still accepted by a good many hundreds of thousands and perhaps millions of people. To many of them this assumption, and the iniquity of government intervention, is regarded as a matter of divine ordinance."[1] But he also emphasizes that those who hold this view are fighting a rear-guard action. Thus he suggests: "As between the two major parties the principle of government responsibility for a high level of employment and output in the economy is no longer an issue. A debate will continue, but will be on the method, vigor, and timing of such intervention."[2]

An automatic economy requires no extensive government organization and the political struggle over economic policy is minimal. Conversely, of course, if the economy is not viewed as automatic, if the need for government guidance is conceded, then a complex governmental structure, involved political processes, and an intense struggle over programs and policies is virtually assured.

For the purposes of this study, these views are accepted as essentially valid descriptions of the change in public attitudes and beliefs which has taken place in recent years. Galbraith points out, significantly, that present-day conservatives even find it necessary to rationalize their private economic programs in terms of fiscal impact and effect on the general economy.

THE SHIFT FROM PRIVATE TO PUBLIC DECISIONS The consequences of these views for resource policy and the political struggle associated with it are tremendous. For one thing, business decisions concerning resource allocations and use are no longer entirely private. Or, stated differently, there is no longer a clearly defined limit to the area of government concern. The test shifts from one of effective service to the citizenry to the question of direct contribution to the economy.

The implications of this shift are only beginning to be explored, and it is not possible to do more than refer to a few of them as they relate to natural-resource policies and programs. For one thing, economics has again become political economy, and a basic problem for political scientists and economists is to develop, in Lippmann's phrase, a "public philosophy"[3] which can guide and direct program and policy decisions.

From the viewpoint of resource policy, one of the most significant implications of the attitude which looks to government to direct economic development arises from the fact that the traditional tests of desirability and feasibiliy, as these have been shaped in the private sector of the economy, are inadequate. The simple measures of profit and loss do not apply to governmental activities, and the controls and influences on decisions of ordinary private businessmen are of limited usefulness. The failure to recognize this fact has posed a curious dilemma for the present Republican Administration, which has in part proceeded on the assumption of automaticity and urged that all governmental business activities be turned over to private firms. But the very nature of the government's role often makes these activities unattractive to private investment. The alternative, then, is subsidization of private agents, which course has nasty political implications. In any case, use of subsidy creates a philosophical dilemma, for the automatic economy should not require subsidy.

STANDARDS FOR PUBLIC DECISIONS A decision to spend (invest) public money for resource development will obviously have an economic impact. It will cost something; it will benefit someone; and it may injure some others. But while public investments may vitally affect the economy, they may not always be "economical" (efficient) in the ordinary business cost-accounting sense. Yet they may be fully justified. The difficulty arises from the primitive and generally inadequate character of the analytical tools and techniques for appraising the merits of such proposals. A system of public cost accounting would seem to be needed, and among its requirements would have to be some way of taking into account what are sometimes called social costs as well as noneconomic benefits.

To a degree, of course, private economic decisions may also have impacts not reflected in business accounts, but there are certain significant differences. The private firm will of necessity disregard many of these unaccounted costs, just as it will not receive many of the benefits nor seek to account for them. Theoretically, the private firm operates under the correctives of profit and loss measured by its own fiscal situation and requirements, calculated over a relatively short time span. Moreover, the frame of reference of firm decisions in the private economy is strictly limited, whereas public decisions must follow the chain of reactions which result from particular decisions—it must, that is, if a concern for the contribution of government to the economy as a whole is a part of the decision.

At the same time, the limitations of any prospective calculus of political economy must be noted, and the view that the economic measure is the only valid one guarded against, at least until more evidence is in.

Public expenditures for roads and highways, for instance, have not been based on estimates of the economic contribution which the investment might make, but rather on the ability of the financing unit to pick up the check,

on convenience, on local pride, and on a substantial hope of future expansion. The willingness of state and local taxpayers (and to a limited extent federal) to invest billions of dollars in the highway system has been a major factor in the prosperity of the automobile industry and in the level of economic activity generally. Yet the decisions with respect to highways have not been based on considerations of this sort. Future economic studies may suggest that our highway programs have been wasteful, that they have drained the economy of capital which might have been more effectively and beneficially invested in other facilities. But this cannot now be determined, and the complexity of the data necessary for analyzing the situation is overwhelming.

Also illustrative of the limitations of an economic measure of desirability are decisions concerning so-called scenic or esthetic resources. What value can be placed on maintaining a wilderness area in its pristine state? How is the beauty of a forest to be measured? Even more difficult; how do we choose between alternate uses, one with obvious economic benefits, the other with esthetic values. If a lumber baron wishes to mow down a particular forest and the nature-lover wishes to preserve it, how does one choose between them? Yet even a park or wilderness area may have economic significance, as the motel operator readily knows. But the point is that the economic measure is often not enough. A recognition of the limitations of the economic measure, however, creates additional problems, because while economic tests can be quantified, other relevant factors cannot as yet be measured. When we abandon the tests of economic feasibility we embark into the unknown, in which personal preference and belief, opinion, and horse-trading are often dominant influences in decision-making.

Developing Criteria for Resource Policy

The problem is twofold: first, to develop effective measures for determining the impact of governmental activities on the economy, and second, to develop criteria for appraising noneconomic decisions. Of considerable interest in connection with the first problem has been the development of cost-benefit analysis as a means for guiding resource-development decisions. This represents a major attempt to provide an objective technique for rationalizing political decisions in the field of resource economics.

COST-BENEFIT ANALYSIS An extensive literature has been accumulating on the subject of cost-benefit analysis, and the related questions of cost allocations, economic and financial feasibility (pay-out), as related primarily to federal water development projects. A review of that literature reveals the complexity of the subject, as well as the extent of bias and commitment of many of those who have contributed to it. It reveals, too, that this field of analysis represents a frontier in the efforts to establish an objective basis for public investment in resource development programs. No attempt can be made here, however, to review the subject in a comprehensive fashion. But it is important to understand a few of the general characteristics and limitations of cost-benefit analysis, since it is of considerable relevance to the larger question of determining the public interest in federal investments in resource development activities.

Several factors provide the background against which theories and techniques of cost-benefit analysis have developed. While federal investment in dams and other river structures antedated World War II by many years, the scope and extent of the earlier programs, even during the 1930s, was limited when contrasted with proposals for postwar development. Army flood control expenditures and investments in the development of the Tennessee River are possible exceptions to this statement, but even these were relatively minor in contrast to the billions that were proposed for multipurpose river developments by the Bureau of Reclamation and the Corps of Army Engineers in the postwar period.

Not alone the size of the prospective federal investments, but other factors contributed to the search for economic formulas for appraising the soundness and desirability of particular proposals. The reclamation program, which had started out in 1902 on a self-supporting, revolving-fund basis, had gradually become a program of direct federal investment. Yet standards for federal participation were unclear and, in the minds of some, were of dubious economic soundness. Pork-barrel politics was not unknown and local favoritism was frequent enough to cause adverse comment and even some scandal. Even more subject to criticism on the pork-barrel issue was the construction work of the Corps of Army Engineers as provided for in the annual rivers and harbors appropriations.

INTER-AGENCY RIVER BASIN COMMITTEE REPORT Against this background, civic-minded Congressmen, opponents of public power and public works, spokesmen for economy in federal expenditures, bureaucrats in various positions (including especially economists), and others combined in an effort to find objective and economically sound standards for federal investment in river development. Their efforts took various forms—congressional committee reports, Hoover Commission analyses, and deliberations of the Federal Inter-Agency River Basin Committee (FIARBC). This Committee had been created after the war to attempt coordination of the several federal agencies interested in river-basin development. Insofar as the cost-benefit problem was concerned, FIARBC created a subcommittee on benefits and costs composed primarily of economists, which in May 1950 after four years work issued its report on "Proposed Practices For Economic Analysis of River Basin Projects."[4] Since that date, this report has provided the starting point for most discussion of the cost-benefit problem.

In its report the subcommittee stated:

> The ultimate purpose of an economic analysis of a project is to ascertain the extent to which the use of economic resources such as the land, labor, and materials necessary for a project is more or less effective than would be the case if the project were not undertaken.[5]

The subcommittee then suggested the following principles as relevant to cost-benefit analysis:

1. The service to be performed by a project will have value only to the extent that a need or demand for that service is to be expected. . . .
2. The most effective use of economic resources is made if they are utilized in such a way that the amount by which benefits exceed costs is at a

maximum. . . . This criterion of maximizing net benefits is a fundamental requirement for economic justification of a project.

3. The project and any separable segment or increment thereof selected to accomplish a given purpose should be more economical than any other actual or potential available means, public or private, of accomplishing that specific purpose which would be displaced or precluded from development if the project is undertaken. . . .
4. From an economic standpoint the order in which a number of economically justified projects should be undertaken should be based on their relative efficiency in the use of economic resources. . . .[6]

It should be noted that the subcommittee was careful to point out that other than economic factors might influence a decision to recommend a particular project, and that very broad questions of economic policy such as the total size of a national public-works program at a particular time could probably not be handled by a formula approach.

LIMITATIONS OF THE SUBCOMMITTEE APPROACH The subcommittee on benefits and costs made a significant start on a difficult and complex problem. But several limitations of its approach should be noted. Being composed of economists employed by the several federal agencies interested in water-resource development, the committee expressed views that tended to be those of the agencies and to reflect existing programs. The report sought to frame a formula which could be used in dealing with the day-to-day administrative problems of the agencies rather than to develop a theoretical base for cost-benefit calculations. For this reason, among others, the report falls short of providing a public philosophy to guide and direct program and policy decisions in the water-resource investment field. To be sure, the procedures proposed by the subcommittee are an improvement over previous techniques, but they still leave unsettled the more general issues of public interest, stressing rather techniques and procedures for handling detailed questions on particular projects.

Moreover, despite the subcommittee's own qualifications, the concept of cost-benefit calculation and the procedures indicated assume a measurability of costs and benefits which, while theoretically valid, actually is doubtful. This doubt is increased by a review of some of the calculations made by particular federal agencies pursuant to the subcommittee's recommendations and of the resulting arguments among agencies. Inevitably, the paucity of data, the inaccuracy of knowledge of project consequences, and the difficult problem of predicting the future all conspire to depreciate the significance of particular calculations and open the door to statistical manipulation, so that benefits can at times be made to equal or exceed costs. Special difficulties arise with respect to the so-called indirect or secondary benefits.

Finally, it should be noted that both experience and practice with respect to cost-benefit calculations are somewhat tangential to the real problem of federal investment policy, since they concentrate on the microcosm of particular projects and never really deal with larger questions of national interest. This the subcommittee itself recognized, but recognizing the problem is only the first step to its solution. Two particularly difficult aspects of national investment policy need to be explored: one involves a consideration of alternative investment opportunities; the other involves priorities among investment opportunities in any given fiscal period.

INVESTMENT ALTERNATIVES AND PRIORITIES The alternatives that should be considered are of several kinds and may be approached from several points of view. In practical administrative terms the fundamental question is how funds which may be available for investment in any given fiscal period should be distributed. In the first instance, the question may be one of alternatives among different types of investment, such as highways, schools, forests, health, and river works. The alternatives are often many, and in the absence of precise data it may be presumed that the economic consequences of choosing one course as against another may be considerably different. An investment in range-land improvement, for instance, will probably affect the total economy quite differently from an equivalent investment in public recreation. A more frequently cited example is an investment in western irrigation as compared to an investment in eastern land improvement. On this point a substantial amount of evidence suggests that for a much smaller investment in eastern farm lands the economy can secure an equivalent increase in food and fiber production. This example suggests another type of highly relevant alternative, namely regional alternatives. Assuming, for instance, that $50,000,000 is available for investment in park facilities, should this investment be made in the Pacific Northwest, the Southwest, New England, the South, or where?

Questions of priorities are similar to the alternative questions already posed, for a priority is but a time alternative. It is particularly relevant to general questions of national fiscal policy.

Enough has perhaps been said to indicate the pitfalls and problems associated with cost-benefit analysis, and also to suggest the importance of this area of study to the entire question of the political economy of natural resources. Here, it would seem, is an area of investigation where political scientist and economist must combine their skills and theories in the search for effective standards by which to measure desirable levels and areas of federal resource investment.

The Criterion of the Public Interest

Preceding chapters gave some indication of the pluralistic, segmental, imperfect, and often nonrational aspects of the governmental process as it relates to natural resources. The criss-crossing of relationships, the multiplicity of factors, the confusion of motives and values, all establish the fact that the processes are tremendously complex and difficult to analyze. Cause and effect are often unclear and relevant knowledge hard to achieve. From problem to policy to program is just not a wide gate and a broad way.

To some people, this picture is disconcerting. Confronted with the complexity of real life, they seek escape in skepticism and cynicism or in unbounded and unfounded idealism. The one road leads to Orwell's *1984*, the other to Huxley's *Brave New World*. Neither is appealing.

CYNICAL AND IDEALISTIC VIEWS To the cynic the great debates of resource policy and the struggles over resource programs, on analysis, reveal nothing but crass rationalizations of personal interests or group advantages. Dire predictions for the future seem to take their place among the fear techniques

by which greed and ambition have ever protected their status or advanced their position. Optimism, such as that generated by the promise of technology, is suspect as an opiate to lull policy-makers into false security and to forestall fundamental action. But in any case, the cynic avers, that action which is needed cannot be determined, for tools of analysis and techniques of program formulation seem inadequate to the imperatives of the situation. Values and ideals are important, but their validity and relevance is questionable. Policies that in prospect have appeared desirable, in retrospect seem inadequate, irrelevant, and even foolish. Organization and management become merely devices by which those with access to points of decision seek to advantage themselves and disadvantage those whom they fear or oppose. Policies and programs, in turn, serve as convenient rationalizations of strategic and tactical maneuvers, and as the substance from which propaganda is formulated.

And so the political struggle over natural resources is portrayed as a game, not with only two teams, but with many, all scurrying about seeking alliances and alignments which will aid in securing decisions favorable to immediate goals. Power, influence, and personal gain are the sole ends of the political process.

Equally disturbed by forthright descriptions of the political struggle over resource policies are the idealists who seek order and system, a simple formula to solve the problems of conservation and development. Firm in the conviction that they are right, they dismiss as inconsequential the doubts engendered by analysis or experience, for their positions are founded upon eternal principles and the laws of nature.

But the position of the cynic as well as that of the idealist is untenable. We must take a stand midway between the dogmatist who entertains no doubt about the validity of his views and the skeptic who believes nothing. We cannot, on the one hand, blink the facts of political life. Nor, on the other hand, recognizing the deficiencies and limitations of the governmental process, can we deny the soundness of the goals we seek.

But what are those goals? How are they to be determined? How defined? Writers and philosophers have struggled endlessly with this problem and have suggested different ways of getting the answers. Some have compiled lists of goals basic to Western society. Dahl and Lindblom,[7] for instance, suggest seven basic concepts: freedom, rationality, democracy, subjective equality, security, progress, and appropriate inclusion. Other lists have been prepared and discussed at length. Without depreciating the significance of the ideas which these lists suggest, we must recognize that such an approach inevitably runs into problems of semantics and definition. And of course it is this difficulty over meaning that totalitarian propagandists exploit, and that Orwell so effectively caricatures in *1984*.

AN OPERATIONAL STANDARD But are abstract and general definitions important? Is finality and precision of meaning the missing link in the chain of effective action? Just as modern science stresses relevancy of fact rather than the truth of fact, and recognizes the futility of seeking fundamental causes and of building complete systems, even so perhaps operational goals and functional definitions may be most useful as criteria for social policy and action. This, at any rate, is the position of this study and leads to the sugges-

tion that the concept of the public interest may prove to be an operational goal, useful as a yardstick for appraising resource programs and policies.

It is objected that the meaning of a phrase like public interest is vague and indefinite, that no one will admit that the course which he espouses is contrary to the public weal. And in any case, it is argued, the content of the term changes from age to age and culture to culture, and no two groups would define it in similar ways. All this must be conceded. But it is submitted that the significant thing about the concept of the public interest is not its definition, but rather *the extent to which public policies and programs are analyzed and justified because of their effect upon and contribution to a defined and identified public good.*

Here the analogy of the judicial system may aid in understanding the approach implied in this statement. No one would maintain that every judicial decision is fair and just, nor even that the cumulated precedents of the common law are the epitome of abstract justice. Yet it seems evident that the judicial system does accomplish substantial justice in the majority of cases which it handles. And certainly the judicial system is constant and unwavering in its search for justice. Even so the goals of public policy and the objectives of the political process should be the search for the public interest.

SEARCH FOR THE PUBLIC INTEREST As the scientist and the scholar search for knowledge, so the politician, the administrator, the citizen should seek the general welfare. Knowledge is infinite, limitless, yet the fact that total knowledge may not be attained and that particular investigations may be fruitless or in error does not deter scientist or scholar in his quest. As the Christian strives for perfection in this life, knowing that he can never attain it yet fighting the good fight and constantly appraising his actions against the inexorable standards of perfection, even so resource programs and policies should ever seek the public interest, the public good, the general welfare. Proposals should be appraised in terms of the expected effects, and policies in terms of their actual effects. Alternatives and consequences must be analyzed and valued, and programs should always be defended, justified, and rationalized in terms of their impact upon and relation to the general welfare.

Our inability to see causes and effects clearly at any particular time need not deter us, though it may give pause to hasty action. We may, in fact, often have to act upon probabilities, recognizing that action based on probabilities may be better than no action at all, so long as risks are calculated.

We must of course guard against identifying the interests of an individual or of a group with the public or general interest. Yet our inability at times to separate personal from general interests need not result in fatal error, so long as we remain willing to examine our premises. We may sincerely believe that "what is good for General Motors is good for the country" and experience may support this position. But what is important, even indispensible, is the *constant, unrelenting search for the public interest and a dedication to furthering programs and policies which on the basis of the best judgments at the time of decision will advance the public good.*

History underlines the fact that a basic premise of democratic government has always been a dedication to the general welfare. The preamble of the United States Constitution contains more than mere felicitous phrases; it

states fundamental premises of democratic government—premises which declare that there is a common or societal interest transcending interests of individuals, groups, or rulers.

To be sure, we may fail in our search for the public interest. The crudity of our techniques may prevent us from reaching our goals. We may often have to be content with approximations rather than with certitude. But the primitive character of his compass did not deter Columbus. The ratio of the known to the unknown has never deterred men of action, in science or in any other field, when action seemed called for.

At the same time, we must be ever ready to redefine and redirect our programs and policies as experience indicates. Any single idea, however good, can become a means for exploitation when embraced to the exclusion of other ideas and other values which experience and judgment indicate as alternatives. This constant examination and re-examination may not be easy, for vested interests develop in bad ideas and bad programs, as well as in good, and programs sound today may be unsound tomorrow. But like others before us, we must struggle as best we can to find the public interest, using the tools and techniques available to us to answer the question: "Is this program, is this policy in the public interest?" When we stop struggling, when we abandon the search for the public interest, we are lost.

It is in the context of the search for the public interest, moreover, that the emphasis on *struggle* as a primary characteristic of the political process takes on significance. Madison saw in factions contending for their particular advantages a threat to the stability of society, and sought through checks and balances and a separation of powers to insulate government from these group influences. To him the public weal lay outside the interests of the several factions, rather than in a synthesis of them, and hence he felt that it must be determined objectively by men of good will. Experience and thought suggest the chimerical nature of Madison's premises, although they do not negate his conclusions as to the risks inherent in the dominance of particular factional interests. Perhaps his error lay in seeking to eliminate rather than to counteract or minimize these risks. Even though one recognizes that those concerned with government are human beings, experience and thought also suggest that Madison's preventives may have been too drastic. Government paralysis when action is required can defeat the public interest.

The concepts of the governmental process which underlie this study of natural resources and the political struggle accept group conflict and strife as inevitable—even necessary and desirable. Through continuing struggle among a multiplicity of groups a working definition of the public interest may be achieved. Like the idea of competition in economics, group struggle is the means by which alternative policies and programs are brought to public attention and submitted to the searching analysis and criticisms of those who oppose them. But more than that, the necessity of gaining effective support for particular proposals subjects them to scrutiny, review, and most importantly to modification so that as the process operates the proposals that can muster support are those which move from the narrow particularist interest in the direction of the larger, common interest. This is, in a sense, "the free trade in ideas" which Justice Holmes regarded so highly, for implicit in his view was the belief that through many "sellers" of ideas would the integrity of

"consumer" choice be maintained. It is, also, the essential characteristic of the political process in America.

At the same time, it is recognized that the process may and often does work imperfectly. Often no one represents the inarticulate, unorganized mass of citizens. Often, too, propaganda, indoctrination, and manipulation are more in evidence than appeals to reason and education. Yet the system contains some of its own correctives, among which the most important is the actual possibility of organizing new groups around new interests.

There is always, too, a danger of uniformity. The answer to this threat would seem to lie in positive steps to maintain the pluralistic character of American society and of its components as these are involved in the political process. Perhaps this even calls for deliberate stimulation of diverse group activity in particular areas of social action to guarantee the integrity of the process. The role of the antitrust laws with respect to the economy may provide an analogy. In any case, the freedom to organize, the freedom to publicize, the freedom to criticize, and the freedom to struggle must be preserved.

In an age of insecurity, the timid among us squirm and fidget when confronted with controversy. They mistake social conflict for social disorganization. Dispute and disagreement—the elements of political struggle—are too often frowned upon. Yet these are the essence of the democratic process in twentieth-century America. And it is through this process that the public interest may be identified and achieved, for the public interest is not some objective principle handed down to mortals from above. It is what we, the public, believe and feel as a result of our experience, as a result of our collective judgments. This has been the basis of the political struggle over resource policy.

FOOTNOTES TO THE STUDY

Chapter One. Natural Resources and the Political Process

1. The literature on the group basis of politics is growing rapidly. Among the more important works on the subject are: David B. Truman: *The Governmental Process*, New York, Alfred A. Knopf, Inc., 1951; Earl Latham: *The Group Basis of Politics*, Ithaca, N. Y., Cornell University Press, 1952; and Bertram M. Gross: *The Legislative Struggle: A Study in Social Combat*, New York, McGraw-Hill Book Co., 1953.
2. Truman, *op. cit.*
3. Gross, *op. cit.*
4. *Ibid.*, p. 5.

Chapter Two. The Roots of Resource Policy

1. A comprehensive survey of pre-Civil War conservation legislation is Ernest A. Engelbert: "American Policy for Natural Resources: A Historical Survey to 1862," unpublished doctoral dissertation, Harvard University, 1950. Particularly useful in Engelbert's work is Appendix A, "Summary of Outstanding Federal Legislation for Natural Resources, 1785–1948."
2. Wallace Stegner: *Beyond the Hundredth Meridian: John Wesley Powell* and the Second Opening of the West, Boston, Houghton Mifflin Company, 1954. Every student of resource policy should read this incisive biography of Powell.
3. John Wesley Powell: *Report on the Lands of the Arid Region of the United States, with a More Detailed Account of the Lands of Utah*, House executive Document No. 73, 45th Cong., 2nd Sess., Washington, 1878.
4. Stegner, *op. cit.*, p. 270.
5. *Ibid.*, p. 212.
6. A very excellent work on this era is Samuel P. Hays: "The Frst American Conservation Movement, 1891–1920," unpublished doctoral dissertation, Harvard University, 1952.
7. *Ibid.*, p. 427.
8. Stegner, *op. cit.*, p. 343.

Chapter Three. Resources and the Future

1. The President's Materials Policy Commission: *Resources for Freedom*, 5 vols., Washington, D. C., United States Government Printing Office, 1952, Vol. I, p. 17.
2. *Ibid.*, Vol. II, p. 5.
3. *Ibid.*, Vol. I, p. 1.

4. *Ibid*, Vol. I, p. 25.
5. *Ibid.*, Vol. I, p. 2.
6. *Ibid.*, Vol. I, p. 25.
7. *Ibid.*, Vol. I, p. 7.
8. *Ibid.*, Vol. III, p. 39.
9. *Ibid.*, Vol. II, p. 75 ff.
10. *Ibid.*, Vol. I, p. 3.
11. *Ibid.*, Vol. I, p. 6.
12. *Ibid.*, Vol. I, p. 3.
13. *Ibid.*, Vol. I, p. 3.
14. *Ibid.*, Vol. I, pp. 18, 19.
15. Quoted in Frank E. Horack, Jr.: *Cases and Materials on Legislation*, Chicago, Callaghan and Company, 1940, p. 29.

Chapter Four. Intergovernmental Relations and the Political Struggle

1. The term *intergovernmental relations* here includes not only relations between different levels of government but relations between different administrative units.
2. A series of these state studies have dealt with resource administration in southeastern states and are summarized in Lawrence L. Durisch and Hershal L. Macon: *Upon Its Own Resources: Conservation and State Administration*, University, Ala., University of Alabama Press, 1951. See also Hubert Marshall and Robert J. Young: *Public Administration of Florida's Natural Resources*, Gainesville, Public Administration Clearing Service, University of Florida, 1953; and William F. Schulz, Jr.: *Conservation Law and Administration: A Case Study of Law and Resource Use in Pennsylvania*, New York, The Ronald Press, 1953.
3. Vincent Ostrom: "Philosophy and Programs for Resources Development in the Western States," mimeographed, a paper delivered at the annual meeting of the American Political Science Association at Buffalo, New York, 1952.
4. Frederick L. Zimmermann and Mitchell Wendell: *The Interstate Compact since 1925*, Chicago, The Council of State Governments, 1951, p. 22.
5. This commission was established by President Truman on January 3, 1952. It reported on January 12, 1953.
6. Missouri Basin Survey Commission: *Missouri: Land and Water*, Washington, D. C., United States Government Printing Office, 1953, pp. 9–11.
7. Arthur Maass: *Muddy Waters: The Army Engineers and the Nation's Rivers*, Cambridge, Mass., Harvard University Press, 1951.
8. Charles M. Hardin: *The Politics of Agriculture*, Glencoe, Ill., The Free Press, 1952.
9. The TVA interest in this controversy is discussed in Norman I. Wengert: *Valley of Tomorrow: The TVA and Agriculture*, Knoxville, Tenn., The Bureau of Public Administration, The University of Tennessee, 1952, Chap. 7.

Chapter Five. The Search for the Public Interest

1. John Kenneth Galbraith: *Economics and the Art of Controversy*, New Brunswick, N. J., Rutgers University Press, 1955, p. 73.
2. *Ibid.*, p. 94.
3. Walter Lippmann: *The Public Philosophy*, Boston, Little, Brown and Company, 1955.

4. Subcommittee on Benefits and Costs of the Federal Inter-Agency River Basin Committee: *Proposed Practices for Economic Analysis of River Basin Projects*, Washington, D. C., 1950. This booklet is popularly known as "The Green Book."
5. *Ibid.*, p. 5.
6. *Ibid.*, p. 5.
7. Robert-A. Dahl and Charles E. Lindblom: *Politics, Economics and Welfare*, New York, Harper and Brothers, 1953, Chap. 2.

COLLEGE LIBRARY
UNIVERSITY

12-14

320.8
D727
no. 24
c. 1

Natural resources and the poli main
320.8D727 no.24
3 1262 03249 0285